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December 8, 2014
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Certified Mail #7011 1570 0001 1559 2571

Jamie McKellar
Alaska Department of Environmental Conservation
Air Permits Program
610 University Avenue
Fairbanks, AK 99709-3643

Re: Demonstration of Compliance with Applicable Emission Limits in the Commercial and Industrial Solid Waste Incineration Units Rule

Dear Mr McKellar:

Sumitomo Metal Mining Pogo LLC (Pogo) operates an incinerator that is designated Emission Unit ID 412 in its air quality operating permit number AQ0406MSS07. Unit ID 412 is also subject to the *Standards of Performance for Commercial and Industrial Solid Waste Incineration Units* (CISWI Units) as set forth in 40 CFR 60 Subpart CCCC.

Pogo recently installed a wet scrubbing system to control SO₂ emissions from the incinerator (Unit ID 412). A performance test was conducted between October 5 and 9, 2014 to demonstrate compliance with all the applicable emission limits in the CISWI Rule.

Because the performance test results demonstrate the incinerator, equipped with the wet scrubber, meets the SO₂ emission limit and all other applicable emission limits, Pogo intends to resume operating Unit ID 412 on December 15, 2014, in accordance with the requirements of permit number AQ0406MSS07 and the applicable CISWI Rule requirements.

Table 1 is a summary of the performance test results, which demonstrate that Unit ID 412 is in compliance with all the applicable emission limits of the CISWI Rule.

A copy of the final performance test report is attached and will also be submitted to EPA. The test report includes documentation of sampling and analytical methods used, as well as all field measurement data, sample custody records, laboratory reports, emissions measurement results, quality assurance/quality control procedures, and incinerator and scrubber operating data.

TABLE 1
Summary of CISWI Unit Performance Test Results
October 5 - 9, 2014

Pollutant	Test Results ¹	CISWI Emission Standards ²	Units
Particulate Matter	57	270	mg/dscm
Sulfur Dioxide	0	1.2	ppmdv
Nitrogen Dioxide	135	170	ppmdv
Carbon Dioxide	3.7	13	ppmdv
Dioxins/Furans (TEQ Basis)	0.12	31	ng/dscm
Dioxins/Furans (Total Mass Basis)	0.65	1,800	ng/dscm
Hydrogen Chloride	1.0	200	ppmdv
Cadmium	0.0041	0.67	mg/dscm
Lead	0.068	0.26	mg/dscm
Mercury	0.0013	0.0035	mg/dscm

¹Average of three test runs, corrected to 7 percent oxygen dry basis.

²From Table 8 to Subpart CCCC of Part 60: all emission limitations are measured at 7 percent oxygen, dry basis at standard conditions.

Based on information and belief formed after reasonable inquiry, I certify that the statements and information in and attached to this document are true, accurate, and complete..

If you have any questions, please contact me at 907-895-2834 or email at chris.kenedy@smmpogo.com or Ben Farnham at 907-895-2730 or ben.farnham@smmpogo.com.

Sincerely,

Chris Kennedy
General Manager

cc: John Kuterbach, ADEC



global environmental solutions

Sumitomo Metal Mining Pogo LLC

Unit 412 CISWI Test Report

SLR Ref: 118.00284.00002

December 2014



Unit 412 CISWI Test Report

Prepared for:

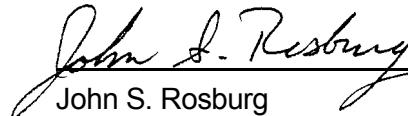
Sumitomo Metal Mining Pogo LLC

3204 International Street
Fairbanks, Alaska 99701

This document has been prepared by SLR International Corp. The material and data in this report were prepared under the supervision and direction of the undersigned.



Doug Bopray
Project Scientist



John S. Rosburg
Senior Scientist

EXECUTIVE SUMMARY

Sumitomo Metal Mining Pogo LLC (Pogo) mine facility is located near Delta Junction, Alaska 99737. The Pogo facility operates under the Alaska Department of Environmental Conservation (ADEC), Air Quality Control Minor Permit Number AQ0406MSS07, issued on July 9, 2014. In the operation of the facility, Pogo employs Unit 412 which is an incinerator used to burn facility non-hazardous waste. The Unit 412 was recently equipped with a wet scrubber to control sulfur dioxide and hydrochloric acid emissions.

Pogo conducted an emissions measurements evaluation of Unit 412 in order to demonstrate compliance and the effectiveness of the Unit 412 recently installed pollution control equipment and compliance with the CISWI rule emission standards. The field measurements of Unit 412 included the following:

- Particulate (PM);
- Nitrogen Oxides (NO_x);
- Dioxins and Furans (D/F);
- Cadmium (Cd);
- Mercury (Hg);
- Sulfur Dioxide (SO_2);
- Carbon Monoxide (CO);
- Hydrochloric Acid (HCl);
- Lead (Pb); and
- Fugitive Ash (Visible Emissions).

The measurements and analytical procedures followed for this test project are accepted United States Environmental Protection Agency (USEPA) Reference Method (RM) procedures and defined in the Code of Federal Regulations, Title 40, Part 60 (40 CFR 60), Appendix A. The results of all measurements are provided in the same engineering units as the applicable emissions standards and are directly comparable to the CISWI rule emission standards.

Pogo has retained SLR International Corporation (SLR) to perform the required emissions measurements. SLR is located at 1612 Specht Point Road, Suite 119, Fort Collins, Colorado 80525. Mr. John Rosburg, Senior Scientist, is the Project Manager for this test program. Mr. Rosburg may be reached by telephone at (970) 420-0602 or by e-mail at jrosburg@slrconsulting.com. Mr. Ben Farnham was responsible for the coordination of the test program and collection of process data. Mr. Farnham may be reached by telephone at (907) 895-2730 or by e mail at Ben.Farnham@smmpogo.com.

Table ES 1 provides the average results of the measurements conducted during the test program performed October 7 through 9, 2014. The results are provided in the same engineering units as the associated emissions standards. The concentration results (mg/dscm at 7% O_2 , ppmvd, ppmvd at 7% O_2 , and ng/dscm at 7% O_2) are all corrected to an oxygen

concentration of seven percent as are the emission limits. **Table ES 1** shows that all the Subpart CCCC emissions limits were met for the various waste-composition mixtures.

Table ES 1 Unit 412 Measurements Results Summary

Test Parameter	Units	Average	Emission Standard
Particulate	mg/dscm @ 7% O ₂	56.69	270
Sulfur Dioxide	ppmdv @ 7% O ₂	0.0	1.2
Nitrogen Oxides	ppmdv @ 7% O ₂	135.3	170
Carbon Monoxide	ppmdv @ 7% O ₂	3.7	13
Dioxins/Furans (total mass basis)	ng/m ³ @ 7 % O ₂	0.116	1800
Dioxins/Furans (TEQ basis)	ng/m ³ @ 7 % O ₂	0.026	31
Hydrogen Chloride	ppmdv @ 7% O ₂	1	200
Cadmium	mg/dscm @ 7% O ₂	0.0041	0.67
Lead	mg/dscm @ 7% O ₂	0.0675	0.26
Mercury	mg/dscm @ 7% O ₂	0.0013	0.0035

Note 1: Measurement results are presented in the units of the applicable emission standards in 40 CFR Part 60, Subpart CCCC, Table 8 (results corrected to an oxygen content of 7 percent).

Note 2: The Incinerator must meet either the Total Mass Basis or the Toxic Equivalency Basis emission limits for Dioxins/Furans.

Note 3: Visual determinations of fugitive ash emissions were conducted between 10/07/14 and 10/09/14 according to RM 22. A total of three observation periods of 60 minutes each were performed. The observations were performed simultaneously with particulate, metals and D/F sample runs. The emission frequency resulted in zero percent for all three observation periods.

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1. INTRODUCTION

Sumitomo Metal Mining Pogo LLC (Pogo) mine facility is located near Delta Junction, Alaska 99737. The Pogo facility operates under the Alaska Department of Environmental Conservation (ADEC), Air Quality Control Minor Permit Number AQ0406MSS07, issued on July 9, 2014. In the operation of the facility, Pogo employs Unit 412 which is an incinerator used to burn facility non-hazardous waste. The Unit 412 was recently equipped with a wet scrubber to control sulfur dioxide and hydrochloric acid emissions.

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The following test report is organized as follows: the testing approach is provided in Chapter 2.0; a description of the process and operations is provided in Chapter 3.0; source test methodology, calculations, and nomenclature are presented in Chapter 4.0; a concise description of the quality assurance/quality control (QA/QC) procedures implemented are

provided in Chapter 5.0; copies of the field data sheets used and continuous emission monitor system (CEMS) 1-minute data averages are provided in Appendix A; copies of the laboratory results are provided in Appendix B; Appendix C contains copies of the equipment calibrations pertinent to this test program; located in Appendix D are copies of the process information recorded during the test program

2. TEST APPROACH

The test plan and protocol outlined specific methods and procedures for quantifying average PM, SO₂, NO_x, CO, D/F, HCl, Cd, Pb, Hg from Unit 412 and visible emissions results associated with the ash handling. All measurements and procedures are accepted USEPA RM procedures and are defined in the 40 CFR 60, Appendix A. Table 2-1 provides the test matrix for the source to be tested and includes the test parameter, methods to be followed, number of sample runs, and approximate run duration. The run duration may vary to some degree as USEPA, Region X has requested that all sample runs begin with an incinerator charge and end just prior to an incinerator charge. The test matrix shown in Table 2-1 is based on the performance test requirements in the CISWI rule for small remote incinerators (see 40 CFR 60 Subpart CCCC, Table 8). The field measurements results are directly comparable to the CISWI rule emission standards to evaluate compliance status and evaluate the effectiveness of the recently installed pollution control equipment.

Table 2-1 **Unit 412 Test Matrix**

Source ID	Test Type	Test Parameter	Method	Number of Runs	Minimum Sample Volume
Incinerator	Performance Test	Sample Points	RM 1	1	NA
		Velocity	RM 2	3	NA
		Molecular Weight (O ₂ & CO ₂)	RM 3A	3	NA
		Moisture	RM 4	3	21 dscf/run
		Particulate	RM 5	4	1 dscm/run
		Sulfur Dioxide	RM 6C	3	NA
		Nitrogen Oxides	RM 7E	3	NA
		Carbon Monoxide	RM 10	3	NA
		Dioxin/Furan	RM 23	3	1 dscm/run
		Hydrochloric Acid	RM 26A	4	1 dscm/run
		Metals (Cd, Pb, Hg)	RM 29	3	2 dscm/run
		Visible Emissions	RM 22	3	NA

Pogo submitted the test plan to the ADEC in accordance with the timeline specified in ADEC, Air Quality Control Minor Permit Number AQ0406MSS06, Condition 26. Condition 26 states that before conducting any source test, the Permittee shall submit a plan to the Department. The plan included a description of the methods and procedures to be used for sampling, quality assurance (QA) and quality control (QC) activities implemented and how the source was to be operated during the test and how Pogo was to document that operation.

The field program was performed on October 5 through 9, 2014. On Day 1 of the field effort, SLR prepared the equipment for testing. Maintenance on the pollution control equipment was being performed on Day 2. Days 3 through 5 entailed the performance of four combined PM and HCl sample runs, three metals (Cd, Pb, Hg) sample runs, three D/F sample runs and ten combined NO_x, SO₂, CO, O₂ and CO₂ sample runs. On Day 5 demobilization of the equipment and field crew, as well as, sample shipping occurred.

2.1 EQUIPMENT PREPARATION

All equipment was prepared and calibrated in accordance with USEPA's Quality Assurance Handbook for Air Pollution Measurement Systems, Volume III; Stationary Source Specific Methods, 40 CFR 60, Appendix A; and SLR's general QA/QC policy described in Chapter 5 of this report. These procedures meet or exceed all USEPA requirements and guidelines for equipment maintenance and calibration. All equipment was in proper working order prior to mobilization to the facility.

2.2 SUMMARY OF FIELD MEASUREMENTS

The Unit 412 incinerator test program was performed according to approved USEPA test methods. The methods selected and listed in **Table 2-1** above are applicable for the determination of the pollutant parameters required by the CISWI Rule. The field measurements results, presented in the following tables, are provided in the same engineering units as the CISWI Rule emission standards to facilitate the evaluation of compliance status and evaluate the effectiveness of the recently installed pollution control equipment.

The PM/HCl, metals (Cd, Pb, Hg) and D/F samples were withdrawn isokinetically from the source and collected on the front-half and condensate portions of the sample train. The sample volume collected during each run is specific to the pollutant parameter and dictated by the CISWI Rule. A total of four PM/HCl sample runs, having a minimum run time of one hour with a minimum volume of one dry standard cubic meter (dscm), were performed. A total of three metals (Cd, Pb, Hg) runs, having a minimum run time of two hours and volume of two dscm, were performed. A total of three D/F sample runs, having a minimum sample run time of two hours and sample volume of one dscm, were performed. The minimum sample run times were chosen based on the reference method followed for each run. The minimum run times were sufficient to collect the minimum sample volumes required by the CISWI rule for small remote incinerators. The actual sample run times varied as USEPA Region X has dictated that all samples be started simultaneously with the loading of a process "batch" and end with a the charging of a "batch."

The gaseous pollutant (SO_2 , NO_x , CO) and diluents (O_2 and CO_2) parameters were measured with a continuous emission monitor system (CEMS). A total of 10, sample runs were performed simultaneously with each isokinetic sample run. The responses of the reference method CEMS instruments were digitally recorded, at one minute intervals, using a Campbell Data Acquisition System (DAS). The CEMS was calibrated with certified Protocol 1 calibration gas standards.

2.3 PARTICULATE AND HYDROGEN CHLORIDE RESULTS

The particulate and HCl samples were collected simultaneously following RM 5 and RM 26A which were combined as allowed by the methods procedures. Two sample runs was collected on the Day 3 of test measurements and one sample each was collected the next two consecutive test days. A total of 12 traverse points were needed for sampling. This was accomplished by sampling six points through each of the two horizontal test ports located at ninety degrees to each other in the same measurement plane. The particulate gravimetric analysis performed at SLR's Fort Collins laboratory and HCl ion chromatography analysis were

performed by TestAmerica located in West Sacramento, California. The particulate and HCl sample results are provided in **Table 2-1**. The table presents the recorded particulate and HCl test parameters, measured effluent parameters, calculated effluent volumetric flow rates, particulate results and HCl results.

The acetone blank residue mass was less than 0.0 mg, therefore, no particulate blank corrections were applied to the particulate sample results. The particulate concentration results ranged from 48.61 mg/dscm @ 7% O₂ for Run I5-1 to 69.70 mg/dscm @ 7% O₂ for Run I5-2. The average particulate concentration, of the first three sample runs, is 59.69 mg/dscm @ 7% O₂.

The HCl blank residue concentration results were below the detection limit, therefore, no HCl blank corrections were applied to the HCl sample results. The HCl concentration results ranged from 0.5 ppmv @ 7% O₂ for Run I5-4 to 1.3 ppmv @ 7% O₂ for Run I5-3. The average HCl concentration, of the first three sample runs, is 1.0 ppmv @ 7% O₂.

Table 2-2 Unit 412 Particulate and Hydrogen Chloride Results

Test Parameters	I5-1 10/07/14 0905-1012	I5-2 10/07/14 1717-1818	I5-3 10/08/14 1636-1743	I5-4 10/09/14 1116-1227	Average * (Run 1-3)
Sample Time (min)	63	58	64	68	62
Vol meter (acf)	54.696	49.945	55.810	59.435	53.484
Ave. SQRT dP (in WC)1/2	0.655	0.653	0.677	0.674	0.662
dH (in WC)	2.46	2.38	2.40	2.42	2.41
T stack (F)	159.2	159.2	160.1	155.3	159.5
T meter (F)	87.0	94.9	101.5	94.9	94.5
P static (in WC)	-0.22	-0.22	-0.21	-0.22	-0.22
P bar (in Hg)	28.75	28.75	28.60	28.30	28.70
P stack (in WC)	28.73	28.73	28.58	28.28	28.68
H ₂ O Mass Gain (g)	391.10	353.60	389.10	371.30	377.93
Yd (meter coef.)	1.008	1.008	1.008	1.008	1.008
dH @ (in WC)	1.898	1.898	1.898	1.898	1.90
Cp (pitot coef.)	0.84	0.84	0.84	0.84	0.84
Dia stack (in)	12.0	12.0	12.0	12.0	12.0
Dia nozzle (in)	0.307	0.307	0.307	0.307	0.307
CO ₂ (%)	4.34	3.87	3.96	3.90	4.06
O ₂ (%)	15.03	15.88	15.93	16.06	15.61
Vol meter (std) (dscf)	51.440	46.296	50.867	54.240	49.534
Vol meter (std) (dscm)	1.46	1.31	1.44	1.54	1.40
Md (lb/lb-mole)	29.30	29.25	29.27	29.27	29.27
Ms (lb/lb-mole)	26.32	26.28	26.29	26.52	26.29
Vwc	18.41	16.64	18.31	17.48	17.79
H ₂ O (%)	26.4	26.4	26.5	24.4	26.4
ISO (%)	103.1	101.2	97.6	96.2	100.6
Flow Rate					
Velocity (ft/s)	42.6	42.5	44.2	43.8	43.1
Vol. Flow Rate (acf m)	2,007	2,001	2,082	2,066	2,030
Vol. Flow Rate (wscfm)	1,644	1,639	1,694	1,676	1,659
Vol. Flow Rate (dscfm)	1,210	1,206	1,245	1,268	1,220
Filterable Particulate Results					
Filter Mass Gain (mg)	28.2	32.1	29.2	32.8	29.8
Acetone Rinse Mass Gain (mg)	1.7	1.0	2.1	0.8	1.6
Acetone Blank Mass Gain (mg)	0.0	0.0	0.0	0.0	0.0
Filterable Particulate Mass Gain (mg)	29.9	33.0	31.3	33.6	31.4
Particulate Concentration (lb/dscf)	1.28E-06	1.57E-06	1.36E-06	1.37E-06	1.40E-06
Particulate Concentration (gr/dscf)	0.0090	0.0110	0.0095	0.0096	0.0098
Particulate Concentration (mg/dscm)	20.53	25.17	21.73	21.88	22.48
Particulate Conc. (mg/dscm @ 7% O ₂)	48.61	69.70	60.77	62.83	59.69
Particulate Emission Rate (lb/hr)	0.09	0.11	0.10	0.10	0.10
Hydrochloric Acid Results					
HCl Mass (mg)	0.58	0.77	1.00	0.44	0.78
HCl Blank Mass (mg)	ND	ND	ND	ND	ND
HCl Concentration (lb/dscf)	2.49E-08	3.67E-08	4.33E-08	1.79E-08	3.50E-08
HCl Concentration (ppmv)	0.3	0.4	0.5	0.2	0.4
HCl Concentration (ppmv @ 7% O ₂)	0.6	1.1	1.3	0.5	1.0
HCl Emission Rate (lb/hr)	1.8E-03	2.7E-03	3.2E-03	1.4E-03	2.6E-03

* Average results are based on the first three runs of the sample series.

2.4 CADMIUM, LEAD AND MERCURY RESULTS

The cadmium, lead and mercury samples were collected simultaneously following RM 29. One sample was collected on Day 3 of the test program and two samples were collected on Day 4. The sample runs were approximately 120-minutes in duration. A total of 12 traverse points were needed for sampling. This was accomplished by sampling six points through each of the two horizontal test ports located at ninety degrees to each other in the same measurement plane. The metals analysis was performed by TestAmerica located in West Sacramento, California. The cadmium, lead and mercury sample results are provided in **Table 2-3**. The table presents the individual and average recorded metals test parameters, measured effluent parameters, calculated effluent volumetric flow rates and metals results.

The cadmium mercury blank residue concentration results were below the detection limit and the lead blank residue concentration results were 0.26 ug/sample. The lead blank residue mass was subtracted from each sample's results.

The cadmium concentration (mg/dscm @ 7% O₂) results for each of the three sample runs ranged from 0.0033 mg/dscm at 7 percent O₂ for Run 129-2 to 0.0047 mg/dscm at 7 percent O₂ for Run 129-1. The average cadmium concentration is 0.0041 mg/dscm at 7 percent O₂.

The lead concentration (mg/dscm @ 7% O₂) ranged from 0.051 mg/dscm at 7 percent O₂ for Run I29-2 to 0.10 mg/dscm at 7 percent O₂ for Run I29-1. The average lead concentration is 0.068 mg/dscm at 7 percent O₂.

The mercury concentration (mg/dscm @ 7% O₂) ranged from 0.0011 mg/dscm at 7 percent O₂ for Run I29-3 to 0.0017 mg/dscm at 7 percent O₂ for Run I29-2. The average mercury concentration is 0.0013 mg/dscm at 7 percent O₂.

2.5 DIOXIN AND FURAN RESULTS

The dioxin and furan samples were collected according to the procedures of RM 23. One sample run was performed during each of three consecutive test days. The three sample runs performed were approximately 120 minutes in duration. A total of 12 traverse points were used for sampling. This was accomplished by sampling six points through each of the two horizontal test ports located at ninety degrees to each other in the same measurement plane. Two sample fractions (front half and back half) were submitted to and analyzed by Analytical Perspectives of Wilmington, North Carolina. Each front half sample was composed of a probe washes and filter. Each back half sample included rinses and XAD-2 resin trap.

Included in **Table 2-4** are the individual and average recorded dioxin and furan test parameters such as stack temperature, meter temperature, pressure, etc. Also included in this table are calculations of effluent molecular weight (wet and dry), moisture content, and isokinetics. In addition, the calculated effluent volumetric flow rates are provided.

The dioxin and furan results are provided in terms of toxicity equivalence (TEQ) concentration (nano-grams per cubic meter [TEQ ng/m³], and TEQ concentration nano-grams per cubic meter

corrected to 7 percent oxygen [TEQ ng/m³ at 7% O₂] and TEQ emission rate (nano-grams per second [ng/s]).

Table 2-5 presents the total dioxin and furan results of the three sample runs and average of the three sample runs. The total dioxin and furan concentration ranged from 0.098 TEQ ng/m³ at 7% O₂ for Run I23-3 to 0.133 TEQ ng/m³ @ 7% O₂ for Run I23-2. The average dioxin and furan concentration is 0.116 TEQ ng/m³ @ 7% O₂.

Table 2-3 Unit 412 Cadmium, Lead and Mercury Results

Test Parameters	I29-1 10/07/14 1121-1324	I29-2 10/08/14 0814-1016	I29-3 10/08/14 1404-1609	Average
Sample Time (min)	129	120	120	123
Vol meter (acf)	111.773	105.202	101.486	106.154
Ave. SQRT dP (in WC)1/2	0.66	0.66	0.66	0.66
dH (in WC)	2.41	2.46	2.41	2.42
T stack (F)	158.0	159.5	158.6	158.7
T meter (F)	95.7	92.8	99.6	96.0
P static (in WC)	-0.23	-0.24	-0.23	-0.23
P bar (in Hg)	28.75	28.60	28.60	28.65
P stack (in WC)	28.73	28.58	28.58	28.63
H ₂ O Mass Gain (g)	776.00	749.40	785.70	770.37
Yd (meter coef.)	1.008	1.008	1.008	1.008
dH @ (in WC)	1.898	1.898	1.898	1.898
Cp (pitot coef.)	0.84	0.84	0.84	0.84
Dia stack (in)	12.0	12.0	12.0	12.0
Dia nozzle (in)	0.307	0.307	0.307	0.307
CO ₂ (%)	4.01	4.32	4.15	4.16
O ₂ (%)	15.68	15.19	15.41	15.43
Vol meter (dscf)	103.472	97.399	92.802	97.891
Vol meter (dscm)	2.93	2.76	2.63	2.77
Md (lb/lb-mole)	29.27	29.30	29.28	29.28
Ms (lb/lb-mole)	26.33	26.29	26.07	26.23
Vwc	36.53	35.27	36.98	36.26
H ₂ O (%)	26.1	26.6	28.5	27.1
ISO (%)	100.7	101.8	99.2	100.6
Flow Rate				
Velocity (ft/s)	42.6	43.3	43.4	43.1
Vol. Flow Rate (acfpm)	2,008	2,039	2,045	2,030
Vol. Flow Rate (wscfm)	1,647	1,660	1,668	1,658
Vol. Flow Rate (dscfm)	1,217	1,219	1,192	1,209
Metals Results				
Cd Mass (ug)	5.2	3.7	4.4	4.4
Cd Blank (ug)	ND	ND	ND	ND
Cd Blank Corrected mass (ug)	5.20	3.70	4.40	4.43
Cd Concentration (ug/dscm)	1.77	1.34	1.67	1.60
Cd Concentration (mg/dscm @ 7% O ₂)	0.0047	0.0033	0.0042	0.0041
Cd Concentration (lb/dscf)	3.78E-11	3.04E-11	3.98E-11	3.60E-11
Cd Emission Rate (lb/hr)	2.76E-06	2.22E-06	2.85E-06	2.61E-06
Pb Mass (ug)	110.0	58.0	54.0	74.0
Pb Blank (ug)	0.26	0.26	0.26	0.260
Pb Blank Corrected Mass (ug)	109.7	57.7	53.7	73.74
Pb Concentration (ug/dscm)	37.5	20.9	20.4	26.28
Pb Concentration (mg/dscm @ 7% O ₂)	0.0997	0.0510	0.0518	0.0675
Pb Concentration (lb/dscf)	7.98E-10	4.74E-10	4.86E-10	5.86E-10
Pb Emission Rate (lb/hr)	0.0001	0.0000	0.0000	0.0000
Hg Empty Mass (ug)	ND	ND	ND	ND
Hg Front Half (ug)	0.03	ND	0.01	0.01
Hg HCl (ug)	1.30	1.80	1.10	1.40
Hg KMnO4 (ug)	0.06	0.10	0.04	0.00
Hg H2O2 (ug)	ND	ND	ND	ND
Hg Blank Sum (ug)	ND	ND	ND	ND
Hg Blank Corrected Mass (ug)	1.39	1.90	1.15	1.48
Hg Concentration (ug/dscm)	0.47	0.69	0.44	0.53
Hg Concentration (mg/dscm @ 7% O ₂)	0.0013	0.0017	0.0011	0.0013
Hg Concentration (lb/dscf)	2.96E-11	4.30E-11	2.73E-11	3.33E-11
Hg Emission Rate (lb/hr)	2.16E-06	3.14E-06	1.95E-06	2.42E-06

Table 2-4 Unit 412 Dioxin and Furan Average Measured Test Parameters

Test Parameters	I23-1 10/07/14 1426-1627	I23-2 10/08/14 1110-1323	I23-3 10/09/14 0829-1044	Average
Sample Time (min)	117	128	130	125
Vol meter (acf)	104.240	112.894	115.981	111.038
Ave. SQRT dP (in WC)1/2	0.677	0.661	0.695	0.678
dH (in WC)	2.56	2.44	2.57	2.52
T stack (F)	153.3	164.9	157.5	158.6
T meter (F)	93.2	95.6	88.7	92.5
P static (in WC)	-0.20	-0.24	-0.22	-0.22
P bar (in Hg)	28.75	28.60	28.30	28.55
P stack (in WC)	28.74	28.58	28.28	28.53
H ₂ O Mass Gain (g)	657.10	963.20	785.00	801.77
Yd (meter coef.)	1.008	1.008	1.008	1.008
dH @ (in WC)	1.898	1.898	1.898	1.90
Cp (pitot coef.)	0.84	0.84	0.84	0.84
Dia stack (in)	12.0	12.0	12.0	12.0
Dia nozzle (in)	0.307	0.307	0.307	0.307
CO ₂ (%)	3.68	4.45	4.28	4.14
O ₂ (%)	16.30	14.97	15.55	15.61
Vol meter (std) (dscf)	96.974	103.995	107.090	102.687
Vol meter (std) (dscm)	2.75	2.94	3.03	2.91
Md (lb/lb-mole)	29.24	29.31	29.31	29.29
Ms (lb/lb-mole)	26.52	25.88	26.41	26.27
V _{wc}	30.93	45.34	36.95	37.74
H ₂ O (%)	24.2	30.4	25.7	26.7
ISO (%)	98.3	107.4	98.1	101.3
Flow Rate				
Velocity (ft/s)	43.6	43.6	45.4	44.2
Vol. Flow Rate (acf m)	2,056	2,057	2,137	2,083
Vol. Flow Rate (wscfm)	1,700	1,660	1,727	1,696
Vol. Flow Rate (dscfm)	1,289	1,156	1,284	1,243

Table 2-5 Unit 412 Dioxin and Furan Results

	Run No.	I23-1			I23-2			I23-3						
	Date	10/07/14			10/08/14			10/09/14			Average			
	Time	1426-1627			1110-1323			0829-1044						
Sample Volume	dscf	96.974			103.995			107.090			102.687			
Sample Volume	m³	2.75			2.94			3.03			2.91			
Moisture Content	% v/v	24.2			30.4			25.7			26.7			
O₂ Concentration	% v/v (dry)	16.30			14.97			15.55			15.61			
CO₂ Concentration	% v/v (dry)	3.68			4.45			4.28			4.14			
Isokinetics	%	98			107			98			101			
Stack Flow rate	dscfm	1,289			1,156			1,284			1,243			
PCDD / PCDF Parameters	TEF (a)	pg	ng/m³ Total Mass	ng/m³ TEQ	pg	ng/m³ Total Mass	ng/m³ TEQ	pg	ng/m³ Total Mass	ng/m³ TEQ	pg	ng/m³ Total Mass	ng/m³ TEQ	
2,3,7,8-TCDD	1.00	14.5	5.3E-03	5.3E-03	20.7	7.0E-03	7.0E-03	14.4	4.7E-03	4.7E-03	16.53	5.7E-03	5.7E-03	
1,2,3,7,8-PeCDD	0.50	31.0	1.1E-02	5.6E-03	49.0	1.7E-02	8.3E-03	30.9	1.0E-02	5.1E-03	37.0	1.3E-02	6.4E-03	
1,2,3,4,7,8-HxCDD	0.10	10.5	3.8E-03	3.8E-04	15.3	5.2E-03	5.2E-04	10.8	3.6E-03	3.6E-04	12.2	4.2E-03	4.2E-04	
1,2,3,6,7,8-HxCDD	0.10	22.5	8.2E-03	8.2E-04	34.8	1.2E-02	1.2E-03	24.2	8.0E-03	8.0E-04	27.2	9.3E-03	9.3E-04	
1,2,3,7,8,9-HxCDD	0.10	16.8	6.1E-03	6.1E-04	24.3	8.3E-03	8.3E-04	17.1	5.6E-03	5.6E-04	19.4	6.7E-03	6.7E-04	
1,2,3,4,6,7,8-HpCDD	0.01	40.2	1.5E-02	1.5E-04	48.9	1.7E-02	1.7E-04	39.7	1.3E-02	1.3E-04	42.9	1.5E-02	1.5E-04	
OCDD	0.001	33.5	1.2E-02	1.2E-05	29.6	1.0E-02	1.0E-05	26.0	8.6E-03	8.6E-06	29.7	1.0E-02	1.0E-05	
2,3,7,8-TCDF	0.10	84.3	3.1E-02	3.1E-03	135	4.6E-02	4.6E-03	88.0	2.9E-02	2.9E-03	102	3.5E-02	3.5E-03	
1,2,3,7,8-PeCDF	0.05	80.7	2.9E-02	1.5E-03	112	3.8E-02	1.9E-03	80.6	2.7E-02	1.3E-03	91.1	3.1E-02	1.6E-03	
2,3,4,7,8-PeCDF	0.50	94.4	3.4E-02	1.7E-02	154	5.2E-02	2.6E-02	105	3.5E-02	1.7E-02	118	4.0E-02	2.0E-02	
1,2,3,4,7,8-HxCDF	0.10	50.4	1.8E-02	1.8E-03	69.1	2.3E-02	2.3E-03	53.9	1.8E-02	1.8E-03	57.8	2.0E-02	2.0E-03	
1,2,3,6,7,8-HxCDF	0.10	50.3	1.8E-02	1.8E-03	72.3	2.5E-02	2.5E-03	54.8	1.8E-02	1.8E-03	59.1	2.0E-02	2.0E-03	
2,3,4,6,7,8-HxCDF	0.10	40.1	1.5E-02	1.5E-03	56.9	1.9E-02	1.9E-03	45.3	1.5E-02	1.5E-03	47.4	1.6E-02	1.6E-03	
1,2,3,7,8,9-HxCDF	0.10	(1.31)	0.0E+00	0.0E+00	(1.23)	0.0E+00	0.0E+00	(1.35)	0.0E+00	0.0E+00	(1.30)	0.0E+00	0.0E+00	
1,2,3,4,6,7,8-HpCDF	0.01	52.9	1.9E-02	1.9E-04	70.1	2.4E-02	2.4E-04	58.2	1.9E-02	1.9E-04	60.4	2.1E-02	2.1E-04	
1,2,3,4,7,8,9-HpCDF	0.01	(4.7)	0.0E+00	0.0E+00	5.4	1.8E-03	1.8E-05	5.86	1.9E-03	1.9E-05	2.2	1.3E-03	1.3E-05	
OCDF	0.001	7.97	2.9E-03	2.9E-06	7.5	2.5E-03	2.5E-06	9.73	3.2E-03	3.2E-06	8.4	2.9E-03	2.9E-06	
TOTAL D/F (ng/m³)		=	0.229	0.040				0.307	0.058				0.219	0.0385
TOTAL D/F (ng/m³ @ 7% O₂)		=	0.679	0.118				0.708	0.133				0.559	0.098
TOTAL D/F (ng/s)		=	0.140	0.0243				0.168	0.0315				0.133	0.0234
													0.252	0.0454
													0.649	0.116
													0.147	0.0264

(a) U.S.EPA (1989) Toxic Equivalency Factor (TEF)

Note: Results below the detection limit are listed as the reporting limit, show n in parentheses,

and treated as zero in the calculation of concentration on a TEQ basis.

EMPC - If a result w as reported as an Estimated Maximum Possible Concentration (EMPC),

the EMPC result is reported as the actual concentration.

2.6 CONTINUOUS EMISSION MONITOR RESULTS

Ten continuous emission monitor sample runs were performed at the Unit 412 exhaust stack test location over a four day period. Each CEMS sample run included the measurements of gaseous pollutant (SO_2 , NO_x , CO) and diluents (O_2 and CO_2) parameters. Prior to the initiation of the CEMS measurements, the CEMS was calibrated with USEPA Protocol 1 calibration gas standards following RMs 3A, 6C, 7E and 10. A calibration bias check of the CEMS was performed prior to the initiation and upon completion of each sample run. The CEMS response was digitally recorded and averaged at 1-minute intervals. The 1-minute data averages were used to calculate sample run averages.

Table 2-6 presents the results of the CEMS sample runs. The results are presented in terms of concentration (ppmv and ppmv at 7% O_2) and emission rate (lb/hr). The emission rate results provided in the table were calculated using the volumetric flow rate recorded by the corresponding isokinetic sample run conducted simultaneously with the CEMS sample run.

Table 2-6 **Unit 412 Continuous Emission Monitoring System Results**

Date	Run Time	Isokinetic Run	Flow (dscfm)	O2 (%)	CO2 (%)	NO _x			CO			SO ₂		
						(ppm)	(ppm@7%O ₂)	(lb/hr)	(ppm)	(ppm@7%O ₂)	(lb/hr)	(ppm)	(ppm@7%O ₂)	(lb/hr)
10/07/14	0905-1005	I5-1	1,210	15.03	4.34	30.8	72.9	0.27	0.9	2.1	0.00	0.0	0.0	0.00
10/07/14	1121-1321	I29-1	1,217	15.65	4.01	48.3	127.9	0.42	0.9	2.4	0.00	0.0	0.0	0.00
10/07/14	1426-1626	I23-1	1,289	16.30	3.68	36.1	109.1	0.33	1.8	5.4	0.01	0.0	0.0	0.00
10/07/14	1717-1817	I5-2	1,206	15.88	3.87	60.7	168.1	0.52	1.3	3.6	0.01	0.1	0.3	0.00
Average			1,231	15.72	3.98	44.0	119.5	0.39	1.2	3.4	0.01	0.0	0.1	0.00
10/08/14	0818-1017	I29-2	1,219	15.19	4.32	41.4	100.8	0.36	1.7	4.1	0.01	0.0	0.0	0.00
10/08/14	1111-1310	I23-2	1,156	14.97	4.45	71.2	166.9	0.59	1.4	3.3	0.01	0.0	0.0	0.00
10/08/14	1404-1604	I29-3	1,192	15.41	4.15	73.8	186.9	0.63	1.9	4.8	0.01	0.0	0.0	0.00
10/08/14	1636-1736	I5-3	1,245	15.93	3.96	59.3	165.8	0.53	1.3	3.6	0.01	0.0	0.0	0.00
Average			1,203	15.38	4.22	61.4	155.1	0.53	1.6	4.0	0.01	0.0	0.0	0.00
10/09/14	0830-1030	I23-3	1,640	15.55	4.28	45.4	118.0	0.53	1.4	3.6	0.01	0.0	0.0	0.00
10/09/14	1115-1215	I5-4	1,268	16.06	3.90	47.7	137.0	0.43	1.1	3.2	0.01	0.0	0.0	0.00
Average			1,454	15.81	4.09	46.6	127.5	0.48	1.3	3.4	0.01	0.0	0.0	0.00
Average Runs 10/7/14-10/9/14			1,264	15.60	4.10	51.5	135.3	0.46	1.4	3.6	0.01	0.0	0.0	0.00

2.7 VISIBLE EMISSIONS RESULTS

Visual determinations of fugitive ash emissions from the ash bin associated with Unit 412 were conducted according to RM 22. A total of three observation periods of 60 minutes each were performed. The observations were performed simultaneously with particulate, metals and D/F sample runs. **Table 2-7** presents the results of the visual observations. The emission frequency resulted in zero percent for all three observation periods.

Table 2-7 Unit 412 Visual Determination of Fugitive Ash Results

Date	Time	Run ID	Accumulated Emission Time (seconds)	Observation Period (seconds)	Emission Frequency (%)
10/08/14	0830-0930	I29-2	0	3,600	0.0
10/08/14	1115-1215	I23-2	0	3,600	0.0
10/08/14	1415-1515	I29-3	0	3,600	0.0
Average			0	3,600	0.0

2.8 AUDIT SAMPLE RESULTS

SLR was responsible for obtaining audit samples required by The NELAC Institute's (TNI) Stationary Source Audit Sample (SSAS) Program which was approved by the USEPA on April 30, 2013 and requires audit samples for compliance demonstrations which begin after June 16, 2013.

SLR ordered one-Mercury on filter paper and one-Mercury in impinger solution, one Metals (cadmium and lead) on filter paper and Metals in impinger solution, and one Hydrogen Halides/Halogens in impinger solution audit samples from Sigma-Aldridge RTC (RTC). RTC contacted ADEC to gain approval of the expected range of the audit samples. Upon receiving approval from ADEC, RTC shipped the audit samples directly to TestAmerica Sacramento. The audit samples were shipped with the performance test samples. TestAmerica analyzed the audit samples simultaneously with the performance test samples using the same equipment, techniques and personnel. TestAmerica submitted the audit sample concentration results to RTC. The RTC then compared the audit sample concentration to the actual concentration and reported the results to the ADEC, Pogo, and TestAmerica. The results of the audit sample analyses are provided in **Table 2-8**.

Table 2-8 Stationary Source Audit Sample Program Analysis Results

Audit ID	Parameter	Engineering Units	Audit Result	Reference Value	Acceptable Range	Pass/Fail
PEA 1947	Mercury on Filter Paper	ug/filter	5.9	6.1	4.57-7.63	Pass
PEA 1950	Mercury in Impinger Solution	ng/ml	15.5	15	11.3-18.8	Pass
PEA 1945	Cadmium on Filter Paper	ug/filter	76.8	83.1	66.5-99.7	Pass
PEA 1945	Lead on Filter Paper	ug/filter	99.9	99.5	79.6-119	Pass
PEA 1948	Cadmium in Impinger Solution	ug/filter	0.538	0.543	0.434-0.652	Pass
PEA 1948	Lead in Impinger Solution	ug/filter	1.188	1.14	0.855-1.42	Pass
PEA 1941	HCl in Impinger Solution	mg/L	117	112	101-123	Pass

3. PROCESS DESCRIPTION AND OPERATION

3.1 PROCESS DESCRIPTION

Unit 412 is an ACS, Inc., Model CA 400, non-hazardous waste incinerator. The unit is fired by propane. The capacities of the unit are as follows:

- Rated Capacity of 240 pounds per hour (Lb/hr) - Type '0' Waste;
- Rated Capacity of 400 Lb/hr - Type '1' Waste;
- Rated Capacity of 480 Lb/hr - Type '2' Municipal Solid Waste;
- Rated Capacity of 240 Lb/hr - Type '3' Waste.

3.2 PROCESS OPERATION

The emission measurements of Unit 412 were conducted under normal and representative process operations at the maximum achievable waste burning rate at the time of testing. The incinerator is equipped with a wet scrubber that was custom designed and installed in 2014 by Met-Pro Environmental for control of SO₂ emissions. The 2-stage, venturi and packed tower scrubber system was operated at its normal pressure drop and liquid flow rate levels during the performance test.

For all measurements associated with Unit 412, all pertinent process and control device operations data were monitored and recorded. The following parameters were monitored and recorded during each sample run:

- Weight of each batch loaded into the incinerator;
- Weight of each type of waste comprising each batch loaded;
- Time interval between batches loaded;
- Primary oven temperature at 5-to-6-minute intervals;
- Secondary oven temperature at 5-to-6-minute intervals;
- Primary oven burn time following loading of final batch;
- Secondary burn time following completion of the primary burn cycle; and
- Wet scrubber operating parameters were monitored

Table 3-1 presents a summary of the incinerator process parameters recorded during the measurements program. Included in the table is the date, time, and associated run identification (ID) of the process data collected. For each sample run, the average primary and secondary temperature (°F) is listed. In addition, the total weight (lb) of each charge type and total charge weight (lb) are presented. The actual process operations data for the time periods during which testing was conducted are provided in Appendix D of this test report.

Table 3-1 Unit 412 Summary of Process Operations

Date	Time	Run ID	Average Primary (F)	Average Secondary (F)	Type 2 Waste (lb)	Type 3 Waste (lb)	Sludge (lb)	Adsorbs (lb)	Total Charge (lb)
10/07/14	0906-1012	I5-1	1,257	1,841	68	23	52	67	210
10/07/14	1121-1334	I29-1	1,437	1,839	100	127	118	109	454
10/07/14	1426-1629	I23-1	1,455	1,844	74	105	114	122	415
10/07/14	1717-1817	I5-2	1,483	1,847	61	88	38	34	221
10/08/14	0803-1017	I29-2	1,370	1,836	68	104	116	142	430
10/08/14	1112-1321	I23-2	1,379	1,845	80	133	116	123	452
10/08/14	1404-1509	I29-3	1,379	1,846	118	103	88	106	415
10/08/14	1636-1743	I5-3	1,375	1,837	43	105	61	22	231
10/09/14	0829-1044	I23-3	1,316	1,839	98	169	92	106	465
10/09/14	1116-1227	I5-4	1,438	1,847	91	139	0	0	230

4. METHODOLOGY

The testing program was performed according to the following accepted and approved USEPA RMs as contained in the USEPA's Quality Assurance Handbook for Air Pollution Measurement Systems, Volume III, Stationary Source Specific Methods, 40 CFR 60, Appendix A. The general procedures that were followed for this measurements evaluation include:

- RM 1 – Sample Velocity Traverse for Stationary Sources;
- RM 2 – Determination of Stack Gas Velocity and Volumetric Flow Rate (Type-S Pitot Tube);
- RM 3A – Determination of Oxygen and Carbon Dioxide Concentrations in Emissions from Stationary Sources (Instrumental Analyzer Procedure);
- RM 4 – Determination of Moisture Content In Stack Gases;
- RM 5 – Determination of Particulate Matter Emissions from Stationary Sources;
- RM 6C – Determination of Sulfur Dioxide Emissions from Stationary Sources (Instrumental Analyzer Procedure);
- RM 7E – Determination of Nitrogen Oxides Emissions from Stationary Sources (Instrumental Analyzer Procedure);
- RM 10 – Determination of Carbon Monoxide Emissions from Stationary Sources;
- RM 22 – Visual Determination of Fugitive Emissions from Material Sources and Smoke Emissions from Flares;
- RM 23 – Determination of Polychlorinated Dibenz-p-dioxin and Polychlorinated Dibenzofuran Emissions from Municipal Waste Combustors;
- RM 26A – Determination of Hydrogen Halide and Halogen Emissions from Stationary Sources Isokinetic Method; and
- RM 29 – Determination of Metals Emissions from Stationary Sources.

4.1 SUPPORT MEASUREMENTS FOR STACK PARAMETERS

USEPA RMs 1 through 4 were performed in support of the emissions measurements procedures selected for quantifying pollutant emission rates. RM 1, selection of sample points for velocity and particulate traverses, was conducted prior to the initiation of any emission measurements at test location. The determination of stack gas flow rate, molecular weight, and moisture content (RMs 2 through 4) were integrated into, and performed concurrently with, each isokinetic sample run.

4.1.1 SELECTION OF TRAVERSE POINTS BY REFERENCE METHOD 1

USEPA RM 1, "Sample Velocity Traverses for Stationary Sources," was followed for the selection of measurement points at the test location. The physical characteristics of the test location meet the minimum criteria of RM 1 for isokinetic sampling. The calculated measurement points were used for all isokinetic sample runs.

4.1.2 FLOW RATE DETERMINATION BY REFERENCE METHOD 2

USEPA RM 2, "Determination of Stack Gas Velocity and Volumetric Flow Rate (Type-S Pitot Tube)," was followed to measure the volumetric flow rate during each sample run at the sample location. This method was incorporated into, and conducted concurrently with, each isokinetic sample run.

RM 2 allows for a stainless steel Type-S or standard pitot tube to be connected to a differential pressure gauge (inclined manometer). The measured pressure differential, observed at each traverse point, was recorded on field data forms and used in determining the overall emission rate for each constituent.

In addition to velocity pressures, gas temperatures was measured and recorded concurrently with all differential pressure data. The temperature was measured with a Type K thermocouple located at the measurement tip of the pitot tube (in the same measurement plane). The Type K thermocouple was connected directly to a calibrated digital temperature indicator for accurate measurements.

4.1.3 MOLECULAR WEIGHT DETERMINATION BY REFERENCE METHOD 3

USEPA RM 3A, "Determination of Oxygen and Carbon Dioxide Concentrations in Emissions from Stationary Sources (Instrumental Analyzer Procedure)," was conducted concurrently with the pollutant measurements at the test location. Sample gas was continuously extracted from the Unit 412 exhaust stack and directed to a combination O₂/CO₂ analyzer. Diluent O₂ and CO₂ data collected during the course of the sampling was used to determine effluent gas dry molecular weight in accordance with USEPA RM 3A.

USEPA RM 3A analyzer calibration requirements include; three point calibrations using USEPA Protocol 1 gas standards and stringent instrument drift requirements. Calibrations were completed at 80 to 100 percent of the full span value, 40 to 60 percent of the full span value, and 0 percent of the full span value (ultra-pure nitrogen for both analyzers).

The O₂/CO₂ analyzer was subjected to a zero and two up-scale calibration gases prior to and upon completion of each sample run. The gas standards are certified and traceable to USEPA Protocol 1 specifications, which require that the gas concentration be within ± 1 percent of the documented value. The response of the analyzers compared to each certified calibration standard must be within ± 2 percent of the high calibration gas standard (CS) value for each component as required by the method.

To calibrate the instruments, the gas standards were introduced directly to the monitors at the sample inlet located on the back of each instrument. For the continuous measurements, the amount of bias of the O₂/CO₂ instrument was also determined. This was accomplished by introducing zero and one span gas to the instrument at the point at which the sample probe and heated sample filter are connected. The response of the analyzers to the direct zero and span gases (bias check) must be less than ± 5 percent of the span value for each component as required by the method. The bias calibration check was performed prior to and upon completion of each isokinetic sample run.

The magnitude of calibration drift was calculated. Calibration drift is the difference in the initial (pre-test) bias calibration response and the final (post-test) bias calibration response for the same gas standard. The calibration drift must be within ± 3 percent of the CS over each sample run for each O₂/CO₂ gas standard as required by RM 3A.

4.1.4 PERCENT MOISTURE DETERMINATION BY REFERENCE METHOD 4

USEPA RM 4, "Determination of Moisture Content in Stack Gases," was incorporated into each isokinetic sample run. The determination of moisture content was accomplished by using a condenser and pump assembly, connected between a sample probe and metering system and performed concurrently with each isokinetic run.

Throughout each isokinetic sample run, a known volume of gas (measured by a dry gas meter) was passed through the condenser assembly. Upon completion of each sample run, the total amount of condensate collected was gravimetrically measured and the net gain calculated. The total moisture gain, volume of gas extracted, and measured meter temperature data was used to calculate the actual moisture content of the effluent.

4.2 PARTICULATE DETERMINATION BY REFERENCE METHOD 5

USEPA RM 5, "Determination of Particulate Matter Emissions from Stationary Sources," was followed to determine particulate emission rates. Each RM 5 sample run was conducted in accordance with all applicable USEPA QA requirements

Samples were withdrawn isokinetically ($100\text{ percent} \pm 10\text{ percent}$) from the source using a modular isokinetic sampling system. The sampling train consisted of a stainless steel nozzle, heated stainless steel probe with an S-Type pitot tube attached, a heated filter, four chilled impingers, and a metering console. The particulate sample was collected on a quartz fiber filter supported by a Teflon frit and maintained at a temperature of $248 \pm 25^\circ\text{F}$. The impinger train was consistent with RM 5.

The system vacuum extracted the effluent gas through the interconnected, leak-free components. The entire system was "leak checked" before and after each individual sample run to ensure sample integrity following RM 5 procedures.

A "K-factor" (coefficient) was determined prior to the initiation of each sample run. This coefficient was based upon preliminary measurements of gas temperature, flow rate, pressure, and moisture content. Multiplying the K-factor by the measured differential pressure determines

the isokinetic sample rate for each sample point. If a variable changed during a sample run, the coefficient was adjusted to maintain isokinetic sampling rates. At isokinetic conditions, the velocity of the stack gas entering the nozzle of the extraction system will be equal to the effluent velocity at the sample point.

The quartz filter was removed from the filter holder and placed in a Petri dish and sealed. The impingers were recovered following RM 5 procedures. The RM 5 sample recovery was conducted in accordance with all applicable USEPA QA requirements.

4.3 SULFUR DIOXIDE DETERMINATION BY REFERENCE METHOD 6C

Sulfur dioxide emissions were quantified at the Unit 412 exhaust stack according to USEPA RM 6C, "Determination of Sulfur Dioxide Emissions from Stationary Sources (Instrumental Analyzer Procedure)." This method allows for the determination of SO₂ concentrations by continuously extracting stack effluent and directing a portion of the sample to an SO₂ analyzer. An AMETEK Model 921M UV photometric SO₂ monitor was used to measure the concentration (parts per million [ppm] by volume) of the effluent at the test location on a dry basis.

RM 6C provides rigorous analyzer calibration requirements, including three point calibrations using USEPA Protocol 1 gas standards, and stringent instrument drift requirements. Calibrations will be performed at 80 to 100 percent of the span value, 40 to 60 percent of the span value, and 0 percent of the span value (ultra-pure nitrogen).

The SO₂ analyzer was subjected to the zero and two up-scale calibration gases prior to and upon completion of the test series. The gas standards are certified and traceable to USEPA Protocol 1 specifications, which require that the gas concentration be within ± 1 percent of the documented value. The response of the analyzer compared to each certified calibration standard must be within ± 2 percent of the CS value for each component. To calibrate the instrument, the gas standards were introduced to the inlet of the SO₂ RM analyzer before and upon completion of each test series. The amount of bias of the SO₂ RM system also was determined before and after each sample run. This was accomplished by delivering zero and one span gas directly to the point where the sample probe and heated sample filter are connected. The response of the analyzer to the bias checks must be less than ± 5 percent of the span value for each check.

The magnitude of calibration drift was also calculated. Calibration drift is the difference in the initial bias calibration response check and the final bias calibration response check for the same gas standard. The calibration drift must be within ± 3 percent of the span for each sample run.

4.4 NITROGEN OXIDES DETERMINATION BY REFERENCE METHOD 7E

USEPA RM 7E, "Determination of Nitrogen Oxides Emissions from Stationary Sources (Instrumental Analyzer Procedure)," was used to accomplish the Unit 412 NO_x measurements. This method allows for the determination of NO_x concentrations by continuously extracting effluent from the stack and directing a portion of the sample to a NO_x analyzer. A Thermo Scientific Model 42i Chemiluminescent NO_x analyzer was used to measure the concentration (ppm by volume) of the effluent at the stack on a dry basis.

USEPA RM 7E provides rigorous analyzer calibration requirements, including three point calibrations using USEPA Protocol 1 gas standards, and stringent instrument drift requirements. Calibrations were completed at 80 to 100 percent of the span value, 40 to 60 percent of the span value, and zero percent of the span value (ultra-pure nitrogen).

The NO_x analyzer was subjected to a zero and two up-scale calibration gases prior to the performance of the sample runs. The gas standards are certified and traceable to USEPA Protocol 1 specifications, which require that the gas concentration is within ± 1 percent of the documented value. The response of the analyzer compared to each certified calibration standard must be within ± 2 percent of the CS for each component.

To calibrate the instrument, the gas standards were introduced directly to the NO_x monitor at the sample inlet located on the back of the instrument. The amount of bias of the NO_x CEM system was also determined. This was accomplished by introducing zero and one span gas to the NO_x system at the point in which the sample probe and heated sample filter are connected. The response of the analyzer system to the zero and span gas (bias check) must be less than ± 5 percent of the CS for each component. The bias calibration check was performed prior to, and upon completion of, each sample run.

The magnitude of calibration drift was also calculated. Calibration drift is the difference in the initial (pre-test) bias calibration response and the final (post-test) bias calibration response for the same gas standard. The calibration drift must be within ± 3 percent of the CS for each sample run for each gas standard.

4.5 CARBON MONOXIDE DETERMINATION BY REFERENCE METHOD 10

The CO measurements were conducted according to USEPA RM 10, "Determination of Carbon Monoxide Emissions from Stationary Sources." Sample gas was continuously extracted from the test location and directed to a Thermo Scientific Model 48i, Gas Filter Correlation (GFC), NDIR CO instrument for analysis. The GFC feature of the CO analyzer eliminates potential interference by substances, which absorb infrared energy.

USEPA RM 10 provides rigorous analyzer calibration requirements, including three point calibrations using USEPA Protocol 1 gas standards, and stringent instrument drift requirements. Calibrations will be completed at 80 to 100 percent of the span value, 40 to 60 percent of the span value, and zero percent of the span value (ultra-pure nitrogen).

The CO analyzer was subjected to a zero and two up-scale calibration gases prior to the performance of the sample runs. The gas standards are certified and traceable to USEPA Protocol 1 specifications, which require that the gas concentration is within ± 1 percent of the documented value. The response of the analyzer compared to each certified calibration standard must be within ± 2 percent of the CS for each component.

To calibrate the instrument, the gas standards were introduced directly to the CO monitor at the sample inlet located on the back of the instrument. The amount of bias of the CO CEM system was also determined. This was accomplished by introducing zero and one span gas to the CO system at the point in which the sample probe and heated sample filter are connected. The

response of the analyzer system to the zero and span gas (bias check) must be less than ± 5 percent of the CS for each component. The bias calibration check was performed prior to, and upon completion of, each sample run.

The magnitude of calibration drift was also calculated. Calibration drift is the difference in the initial (pre test) bias calibration response and the final (post test) bias calibration response for the same gas standard. The calibration drift must be within ± 3 percent of the CS each sample run for each gas standard.

4.6 VISIBLE EMISSIONS BY REFERENCE METHOD 22

This method was followed to determine visible smoke emissions from the Unit 412 incinerator process. The method is used to determine the amount of time that visible emissions occur during the observation period (i.e., the accumulated emission time). This method does not require that the opacity of emissions be determined. Since this procedure requires only the determination of whether visible emissions occur, observer certification according to the procedures of RM 9 is not required. However, it is necessary that the observer is knowledgeable with respect to the general procedures for determining the presence of visible emissions. At a minimum, the observer was trained and knowledgeable regarding the effects of background contrast, ambient lighting, observer position related to lighting, wind, and the presence of uncombined water (condensing water vapor) on the visibility of emissions.

4.7 DIOXINS AND FURANS DETERMINATION BY REFERENCE METHOD 23

USEPA RM 23, "Determination of Polychlorinated Dibenzo-p-dioxin and Polychlorinated Dibenzofuran Emissions from Municipal Waste Combustors," was followed to determine D/F concentrations and emissions from the Unit 412 test location.

4.7.1 SAMPLE TRAIN COMPONENT PREPARATION

All glass parts of the sample train, including the sorbent trap, were pre-cleaned prior to sampling according to the following procedures:

- Soak in hot soapy water (Alconox) at 50°C or higher;
- Rinse three times with tap water;
- Rinse three times with deionized water;
- Rinse three times with pesticide grade acetone;
- Rinse three times with pesticide grade methanol/methylene chloride;
- Bake at 450°F for 2 hours; and
- Seal with clean Teflon tape.

The glassware was sealed with Teflon tape followed by aluminum foil until sample train assembly. Following sample recovery, the glassware was reused at the same sampling location as allowed by the method.

The XAD-2 resin traps were pre-cleaned and prepared by SGS-Environmental Services. Each sorbent trap was charged with 20 to 30 grams of the pre-cleaned resin, and the five surrogate compounds listed in Table 2 of RM 23 were added to the resin. Care was taken to ensure that the resin is kept at temperatures below 120°F during shipment and before and after sample collection to prevent resin decomposition. The time between charging the trap and use in the field was minimized and was not allowed to exceed 14 days. The sorbent traps were shipped from SGS- Environmental Services to Pogo's facility under strict COC documentation.

4.7.2 SAMPLE COLLECTION

Samples for D/F were withdrawn isokinetically from the source using an RM 23 sampling train as depicted on **Figure 4-1**. The sampling train consisted of a Teflon-coated, stainless steel nozzle, a heated Teflon lined probe, a pre-treated glass fiber filter maintained at a temperature of 248°F ± 25°F, a water-cooled condenser, a sorbent trap containing XAD-2 resin, five chilled impingers, and a metering console. The water-cooled condenser and sorbent trap were arranged in a manner that allows the condensate to drain vertically through the trap. Gas entering the trap was maintained at or below 68°F. The first impinger (optional knockout) was empty, the second and third impingers each contained 100 ml of HPLC water, the fourth was empty, and the fifth contained pre-weighed silica gel. Sealing greases was not used on any portion of the sample train.

4.7.3 SAMPLE RECOVERY

Recovery of the samples and assembly of the sample trains for reuse was conducted in a dust-free environment. Each impinger and the XAD-2 trap was weighed prior to and at the conclusion of each sample run. The volume of water vapor condensed in the impingers, XAD resin and silica gel was summed and entered into moisture content calculations.

All sample-exposed components of the sampling train were rinsed with acetone and methylene chloride, and finally toluene. Sample containers from a typical run include the following:

- Container 1 – Filter(s);
- Container 2 – Combined acetone and methylene chloride rinses of nozzle, probe, and front-half of filter holder and rinses of back-half of filter holder and condenser;
- Container 3 – Toluene rinses of nozzle, probe, and front-half of filter holder and rinses of back-half of filter holder and condenser;
- Container 4 – XAD cartridge and resin;
- Container 5 – Impinger contents; and
- Container 6 – Silica gel.

The samples, comprised of containers 1 through 3, were shipped to SGS Environmental Services under strict COC documentation. Appropriate shipping containers were used to keep the samples cool during shipping.

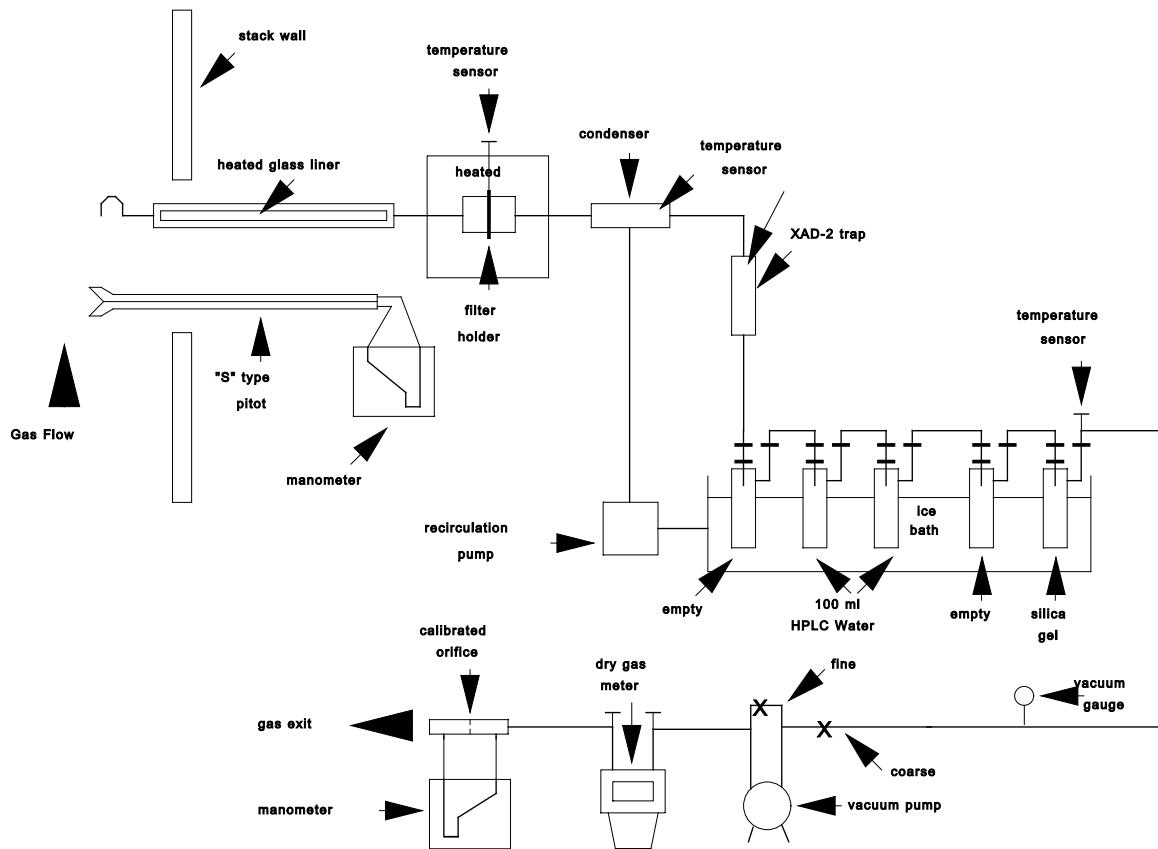


Figure 4-1 Reference Method 23 Sampling Train

4.7.4 SAMPLE ANALYSIS

The RM 23A samples were analyzed by SGS Environmental Services in strict accordance with SGS Environmental Services' QA Program. The filter(s), XAD-2 resin, toluene, and methylene chloride rinses were analyzed for tetra-octa (4-8) D/F according to USEPA RM 0023A with high-resolution gas chromatography/high resolution mass spectrometry. All extracts from one run were analyzed in separate front-half and back-half sample fractions.

4.7.5 DATA REDUCTION

The D/F results were expressed in terms of toxicity equivalents (TEQ), as specified in 40 CFR §63.1342. The D/F congeners (tetra, hepta, hexa, and octa) were converted to TEQ using toxicity equivalence factors (TEFs), as the summation of the TEFs of the congeners, multiplied by their relative concentrations.

Any D/F congeners that are reported by Analytical Perspectives, Inc. as non-detected (below the method detection limit ND) were counted as zero for purposes of calculating the total D/F TEQ concentration for that sample, as specified in RM 0023A (§7.4).

4.8 HYDROGEN CHLORIDE DETERMINATION BY REFERENCE METHOD 26A

USEPA RM 26A, "Determination of Hydrogen Halide and Halogen Emissions from Stationary Sources Isokinetic Method," was followed for the determination of HCl emissions at the Unit 412 test location. This method was performed in conjunction with the particulate measurement procedures as allowed by the methods. Included in the RM 26A sampling system were a calibrated-glass or Teflon-coated nozzle, stainless steel probe, glass or Teflon probe liner, insulated filter oven, glass filter holder and tared quartz-fiber filter, condenser assembly, and calibrated extraction system. The system vacuum extracted the effluent sample gas through the interconnected, leak-free components. The entire system was "leak checked" before and after each individual sample run to ensure sample integrity.

A "K-factor" (coefficient) was determined prior to the initiation of each RM 26A sample run. This coefficient was based upon preliminary measurements of gas temperature, flow rate, pressure, and moisture content. Multiplying the K-factor by the measured differential pressure at each sample point provided for isokinetic sample rates for each sample point. If a variable changed during a sample run, the coefficient was adjusted to maintain isokinetic sample rates. At isokinetic conditions, the velocity of the stack gas entering the nozzle of the extraction system was equal to the effluent velocity at the sample point.

The condenser assembly consisted of a series of five glass impingers with glass inserts interconnected to each other by glass U tubes, providing a "leak tight" seal with 28/15 ball and socket connections. The first and second impingers contained sulfuric acid (H_2SO_4). The third and fourth impingers contained sodium hydroxide (NaOH). The fifth impinger was filled with a pre weighed amount of silica gel to capture any residual moisture from the sample stream. The impinger train was set in an ice bath to maintain the extracted gas outlet temperature at or below 70°F. By cooling the sample, all water vapor and gases was condensed and collected.

Three valid sample runs were performed at the test location. Upon completion of each sample run, the probe was removed from the effluent and allowed to cool. A leak check of the sampling system was then performed to verify the integrity of the system. The leak rate must not exceed 0.02 actual cubic feet per minute (acf m) in order for the test to be considered valid.

Each sample train was carefully recovered. The H_2SO_4 solution in the first two impingers was quantitatively recovered in a glass sample container. The impingers and connecting glassware were then rinsed with water and added to the same sample jar. The contents of the third and fourth impingers were placed in a glass sample jar. The silica gel from the fifth impinger was weighed to determine the moisture gain.

Portions of the H_2SO_4 and NaOH absorbing reagents were collected for blanks and diluted to the approximate volume of the corresponding sample jars with rinse water from the same wash bottle used. All liquid levels were marked. The H_2SO_4 and NaOH sample jars and reagent blanks were sent to TestAmerica located in West Sacramento, California for HCl analysis by IC.

4.9 METALS DETERMINATION BY REFERENCE METHOD 29

USEPA RM 29, "Determination of Metals Emissions from Stationary Sources," was followed to determine the metals (Cd, Pb, Hg) emission rates exhausted by Unit 412. Included in the RM 29 sampling system were a calibrated glass or Teflon coated stainless steel nozzle, stainless steel probe, glass or Teflon probe liner, insulated filter oven, glass filter holder and tared quartz-fiber filter, condenser assembly, and calibrated extraction system. The system vacuum was used to extract the effluent gas through the interconnected, leak-free components. The entire system was "leak checked" before and after each individual sample run to ensure sample integrity.

A "K-factor" (coefficient) was determined prior to the initiation of each metals sample run. This coefficient was based upon preliminary measurements of gas temperature, flow rate, pressure, and moisture content. Multiplying the K-factor by the measured differential pressure determines the isokinetic sample rate for each sample point. If a variable changed during a sample run, the coefficient was adjusted to maintain isokinetic sampling rates. At isokinetic conditions, the velocity of the stack gas entering the nozzle of the extraction system was equal to the effluent velocity at the sample point.

4.9.1 SAMPLING BY REFERENCE METHOD 29

By this method, metals emissions were withdrawn isokinetically from the selected sources, collected on a heated filter (maintained at a controlled temperature of $248 \pm 25^{\circ}\text{F}$), and passed through a series of chilled impingers containing solutions of nitric acid/hydrogen peroxide ($\text{HNO}_3/\text{H}_2\text{O}_2$) and potassium permanganate (KMnO_4) as shown in **Figure 4-2**.

The sample components were recovered in separate front-half (probe wash and filter) and back-half (impinger solutions) fractions. The front-half and back-half components were rinsed with 0.1 normal (N) nitric acid (HNO_3) to capture all particulate and collected in their respective containers. The probe wash, digested filter, and aliquots of impinger solutions were analyzed for metals by inductively coupled plasma-mass spectroscopy (ICPMS) analysis or cold vapor atomic absorption (CVAA) analysis.

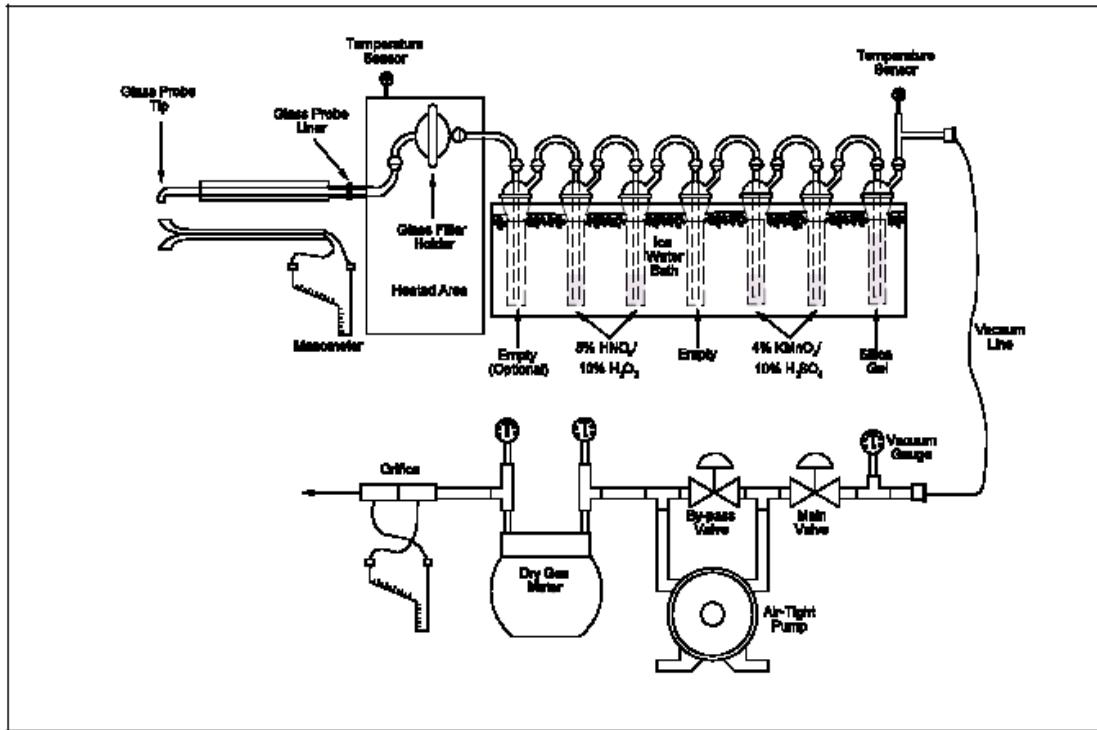


Figure 4-2 Reference Method 29 Sampling Train

The condenser assembly consisted of a series of six glass impingers with glass inserts interconnected to each other by glass U tubes, providing a “leak tight” seal with 28/15 ball and socket connections. The first and second impingers contained $\text{HNO}_3/\text{H}_2\text{O}_2$. The third impinger was left empty. The fourth and fifth impingers contained KMnO_4 . The sixth impinger was filled with a pre weighed amount of silica gel to capture any residual moisture from the sample stream. The impinger train was set in an ice bath to maintain the extracted gas outlet temperature at or below 70°F. By cooling the sample, all water vapor and gases were condensed and collected. **Table 4-1** describes the condensate (impinger) train configuration for RM 29 testing including the KMnO_4 impingers which are exclusive to mercury capture and analysis.

Table 4-1 Reference Method 29 Condensate (Impinger)

Impinger No.	Contents	Configuration
1	100 ml $\text{HNO}_3/\text{H}_2\text{O}_2$	Straight
2	100 ml $\text{HNO}_3/\text{H}_2\text{O}_2$	Greenburg-Smith
3	Empty	Straight
4	100 ml KMnO_4 (Optional)	Straight
5	100 ml KMnO_4 (Optional)	Straight
6	200 - 300 g Silica Gel	Straight

Prior to sampling, the impingers and their contents were weighed and the initial weights recorded. Upon completion of sampling, the impingers were removed from the ice bath and the

moisture gain was determined gravimetrically by subtracting the final weight from the initial weight for each impinger.

Three valid sample runs were performed for each of the processes being tested. Upon completion of each sample run, the probe was removed from the exhaust stack and allowed to cool. A leak check of the sampling system was performed to verify the integrity of the system. The leak rate must not exceed 0.02 acfm, in order for the test to be considered valid.

Each sample train was carefully recovered. The filter was removed from its sample holder with Teflon-coated or non-metallic tweezers and placed in a labeled petri dish. The nozzle, probe, and front half of the filter holder were first rinsed with 0.1N HNO₃ to collect any metals that adhered to the front-half components. The rinse was quantitatively recovered in a glass sample container. The contents of the first three impingers were placed in a glass sample jar; the impingers and filter back-half were then rinsed with 100 milliliters (ml) of 0.1N HNO₃ and added to the same sample jar. The contents of the fourth and fifth impingers were placed in a glass sample jar; these impingers were then rinsed with 100 ml of KMnO₄ and added to the same sample jar. The silica gel from the sixth impinger was weighed to determine moisture gain.

4.9.2 ANALYSES BY REFERENCE METHOD 29

Each recovered sample was composed of four fractions: a filter, HNO₃ front-half wash, HNO₃/H₂O₂ impinger contents with rinse, and KMnO₄ impinger contents and rinse. The filter was digested and added to the probe wash for metals analysis. Proportional aliquots of the probe rinse (front-half of the sample train) and samples recovered from impingers 1 through 3 and rinses (back-half of the sample train) were combined and analyzed by ICPMS analysis or CVAA analysis for mercury.

4.10 CALCULATIONS AND NOMENCLATURE

The following section presents the calculations for determining flow rate, molecular weight, and moisture content. In addition, calculations for the determination of particulate concentration and particulate emission rate are provided below. The nomenclature for each calculation also is defined.

Calculations

Stack Pressure (in Hg):

$$P_s = P_b + \frac{P_g}{13.6}$$

Volume of Water Collected (scf):

$$V_{wc(std)} = 0.04707 \times MG$$

Gas Meter Volume at Standard Conditions (dscf):

$$V_{m(std)} = V_m \times Y_d \times \left(\frac{T_{std}}{P_{std}} \right) \times \left(\frac{P_b + \frac{\Delta H_{avg}}{13.6}}{T_{m(avg)}} \right)$$

Fractional Moisture Content (dimensionless):

$$B_{ws} = \frac{V_{wc(std)}}{V_{wc(std)} + V_{m(std)}}$$

Moisture Content (%):

$$H_2O \% = B_{ws} \times 100$$

Molecular Weight (dry, lb/lb-mole):

$$M_d = (0.44 \times \% CO_2 + (0.32 \times \% O_2) + (0.28 \times (100 - \% CO_2 - \% O_2)))$$

Molecular Weight (wet, lb/lb-mole):

$$M_s = M_d \times (1 - B_{ws}) + (18 \times B_{ws})$$

Velocity (feet per second):

$$v_s = 85.49 \times C_p \times \sqrt{\Delta p} \times \sqrt{\frac{T_s}{P_s \times M_w}}$$

Flow Rate (actual cubic feet per minute):

$$Q_a = V_s \times A_s \times 60$$

Flow Rate (dry standard cubic feet per minute):

$$Q_s = Q_a \times (1 - B_{ws}) \times 17.64 \times \left(\frac{P_s}{T_s} \right)$$

Percent Isokinetic (%):

$$\% I = \frac{0.09450 \times T_s \times V_{m(std)}}{P_s \times v_s \times A_n \times \Theta \times (1 - B_{ws})}$$

Particulate Concentration (lb/dscf):

$$C_{particulate} = \frac{MG_{particulate}}{453.5924 \times V_{m(std)}}$$

Particulate Emission Rate (lb/hr):

$$E_p = C_{particulate} \times dscfm \times 60$$

Gaseous Pollutant Concentration (dry, ppm):

$$C_{gas} = (C' - C_o) \times \left(\frac{C_{ma}}{C_m - C_o} \right)$$

Gaseous Pollutant Emission Rate (lb/hr):

$$E_{gas} = \frac{C_{gas} \times MW \times Q_s \times 60}{385 \times 1,000,000}$$

Emissions of D/F (ng TEQ/dscm):

$$C_{(D/F)T} = \frac{\sum_{i=1}^n C_{(D/F)i} TEF_i}{V_{m(std)}} \frac{ng}{1,000pg} \frac{(20.9 - 7)}{(20.9 - \% O_2)}$$

Nomenclature

A_n	Cross-Sectional Area of the Nozzle (square feet)
A_s	Cross-Sectional Area of the Stack (square feet)
B_{ws}	Water Vapor in Gas Stream (proportional by volume)
C'	Average Gas Concentration Indicated by Analyzer, dry basis (ppm)
CC	Confidence Coefficient (one tailed, 2.5% error)
C_{gas}	Corrected Effluent Gas Concentration, dry basis (ppm)
C_m	Average of Initial and Final System Calibration Bias Check Responses for the Upscale Calibration Gas (ppm)
C_{ma}	Actual Concentration of Upscale Calibration Gas (ppm)
C_o	Average of Initial and Final System Calibration Bias Check Responses for the Zero Gas (ppm)
C_p	Pitot Tube Coefficient, Dimensionless (0.84 for Type-S)
$C_{particulate}$	Particulate Concentration (lb//dscf)
$C_{(D/F)i}$	Concentration of D/F congener i in sample (pg/liter)
$C_{(D/F)T}$	Total concentration of D/F congeners in sample (ng/liter)
D/F	Stack concentration of polychlorinated dibenzo-p-dioxins and polychlorinated dibenzofurans (ng TEQ/dscm)
ΔP	Average Velocity Head of Gas (in WC)
E_p	Particulate Emission Rate (lb/hr)
$H_2O\%$	Moisture Content of Gas Stream (%)
M_d	Molecular Weight of Stack Gas, dry basis (lb/lb-mole)
M_s	Molecular Weight of Stack Gas, wet basis (lb/lb-mole)
$MG_{particulate}$	Particulate mass gain (mg)

MW	Molecular Weight of Pollutant ($\text{SO}_2 = 64$, $\text{NO}_X = 46$, $\text{CO} = 28$)
ng	nanograms (10^{-9} grams)
pg	picograms (10^{-12} grams)
P_b	Uncorrected Barometric Pressure (in Hg)
P_g	Static Pressure of Stack Gas (in WC)
P_s	Absolute Pressure of Stack Gas (in Hg)
P_{std}	Standard Absolute Pressure (29.92 in. Hg)
%CO ₂	Percent Carbon Dioxide, Dry Basis
%O ₂	Percent Oxygen, Dry Basis
%I	Isokinetic sample rate (%)
Q _a	Actual Flow Rate (acf m)
Q _s	Dry Standard Flow Rate (dscfm)
RM	Reference Method (RM 6C, RM 7E or RM 10) Data Average (arithmetic mean)
T _{m(avg)}	Average DGM Absolute Temperature (°R)
T _s	Average Stack Gas Temperature (°R)
V _s	Average Gas Velocity (feet per minute)
T _{std}	Standard Absolute Temperature (528 °R)
V _m	Dry Gas Volume as Measured by the DGM (dcf)
V _{m(std)}	Dry Gas Volume Corrected to Standard Conditions (dscf)
V _{wc(std)}	Volume of H ₂ O Collected in Impingers and Silica Gel Corrected to Standard Conditions (ml)
Y _d	DGM Calibration Factor
Θ	Sample Time (minutes)

5. QUALITY ASSURANCE/QUALITY CONTROL

5.1 OBJECTIVES

The objectives of SLR's QA/QC program are as follows:

- To continually monitor the precision and accuracy of the data being generated for all source emission measurements.
- To implement measures designed to control the precision and accuracy of all data generated for individual sources.
- To maintain permanent records of analytical QC data and equipment calibrations that include traceability and certification.
- To identify, document, and maintain a COC log, which accounts for each method sample collected during each measurement program.

5.2 FIELD PROGRAM

All primary, USEPA-approved testing procedures selected for this test program are referenced in the 40 CFR 60, Appendix A. No deviations from these procedures were necessary. All field personnel responsible for this emission test program followed the procedures dictated by the applicable test methods.

All field test personnel involved with this test program are experienced and trained in field sampling methods and procedures. Each field personnel was assigned key responsibilities in phases of sample collection, sample recovery, COC, and transportation of samples. Basic responsibilities for field personnel include, but are not limited to:

Recordkeeping. Field Personnel recorded all pertinent test parameters and relevant observations on the appropriate field data forms.

Safety requirements. Field personnel are familiar with all company safety regulations and were provided with all the necessary safety equipment.

Sample handling. Field personnel are trained in the proper procedures for handling samples including: use of sample containers, sample preservation, identification, storage of collected samples, and COC.

Instrumentation. Specific field personnel are trained in the proper operation, calibration, trouble shooting, and maintenance of the instrumentation intended for this program. This includes the use of pumps, control console(s), samplers, and instrumentation.

Quality control (QC). Field personnel are trained in all aspects of QC that relate directly to the specific reference method test procedures, sample handling, analyses, and reporting.

Mr. John Rosburg, of SLR, was the designated Project Manager and was responsible for coordinating testing activities with Pogo and ADEC. He provided answers to questions concerning test methodology, QC, and all other project aspects. The Project Manager was also responsible for delegating work assignments to the members of the test crew, making sure all QA/QC procedures are carried out, and documenting all field activities in a bound log book.

All field instrumentation are maintained and calibrated according to all applicable USEPA guidelines. Records of instrument maintenance and calibration are kept in historical files and continually updated. Calibrations of all field instrumentation, at a minimum, meet or exceed the mandated procedures stipulated in the Quality Assurance Handbook for Air Pollution Measurement Systems, Volume III. All documentation of calibrations is maintained on file at all times. Calibration documentation for the equipment used in this test program is provided in the Appendices of the test report.

5.3 SAMPLE DOCUMENTATION

All field data collected for each selected reference method test procedure was documented on field data forms. Each form, specific to each particular sample run, includes information as to the source tested, date and time of sample collection, analyst(s) performing the test, and all data necessary for test validation. Each field data sheet was completed by the responsible technician at the time of the test and checked by the Project Manager for accuracy and completeness after each test series. Copies of all raw field data sheets were included in the appendices of the test report, with the originals maintained in project files at SLR's Fort Collins office.

Sample containers utilized for the collection and storage of samples are specific to each test procedure. Filter substrates were maintained in individually labeled polyethylene Petri dishes sufficient in size to receive the samples unaltered and with the exposed surface protected from sample loss.

Collection of all blanks was specific to each test performed. The field blanks were collected at the test location and subjected to the same ambient conditions as the samples. This type of blank was collected for each reagent used in each test series and analyzed in the same manner as the sample itself.

Each recovered sample was labeled with standard sample tags and uniquely identified. The tags provided information regarding the unit tested, sample location, date and time of collection, reagent(s) used, and the test number. The sample container was sealed, liquid level marked (if applicable), and properly stored until it is transported to the laboratory.

Standard COC forms were completed before any samples are transported to the laboratory. This procedure is dictated by the USEPA and strictly adhered to by SLR. Each sample was tagged with a COC tag, which requires the same information as the field sample label.

5.4 AUDIT SAMPLE

Reference Method 26A (HCl) and RM 29 (Cd, Cr and Hg) Audit Samples were included as a part of this test program. The audit samples are required by the NELAC Institute's (NI) Stationary Source Audit Sample (SSAS) Program which was approved by the USEPA on April 30, 2013 and requires audit samples for compliance demonstrations which began by June 16, 2013.

5.5 ANALYTICAL QUALITY CONTROL

All analytical procedures used for this program are approved by the USEPA and referenced in 40 CFR 60 (where applicable). All particulate gravimetric analysis was performed by SLR at the Fort Collins Air Resources Laboratory. SLR's QA/QC program meets or exceeds USEPA standards. The D/F XAD-2 resin traps and filters were prepared by SGS Environmental Services of Wilmington, North Carolina who also performed the sample analysis. The metals (Cd, Pb, Hg) and HCl analysis were performed by TestAmerica located in West Sacramento, California.

5.6 DATA REDUCTION AND REPORTING

SLR has implemented specific measures to ensure that reliable data is generated as a result of the sampling and analytical activities of every field program. The objective of this phase of SLR's QA/QC program is to follow the proper collection of representative and QA field and analytical data with approved data reduction methods and equations.

All calculations are performed using QA spreadsheets incorporating standard accepted equations, as required by the applicable pollutant specific sampling methodology. Data reduction was performed by qualified engineers or data analysts familiar with standard engineering practices and approved methods. Calculation methods and equations, including conversion factors and units, are defined in this test report to allow the reviewer to easily reproduce the final results from the raw field data and process information provided in the appendices of the report. This final report includes all raw data, QA/QC documentation, and process data collected during the test program. The initial draft of the test report, including both narrative and calculations, was subjected to review by the Project Manager and/or Principal-in-Charge, prior to final publication.

APPENDIX A

FIELD DATA FORMS AND CEMS DATA

Unit 412 CISWI Test Report
Sumitomo Metal Mining Pogo LLC
3204 International Street
Fairbanks, Alaska 99701

December 2014

Table 1
 Continuous Emissions Measurements Results
 Run 15-1
 10/07/14

Time (1-min)	NOx (ppm)	NOx (ppm Cor.)	(lb/hr)	CO (ppm)	CO (ppm Cor.)	(lb/hr)	SO2 (ppm)	SO2 (ppm Cor.)	(lb/hr)	O2 (%)	O2 (% Cor.)	CO2 (%)	CO2 (% Cor.)
906	35.6	35.6	0.31	1.0	0.8	0.00	-0.6	0.0	0.00	15.98	16.00	3.50	3.42
907	33.2	33.1	0.29	1.3	1.1	0.01	-0.5	0.0	0.00	15.99	16.01	3.56	3.48
908	37.5	37.4	0.32	0.8	0.6	0.00	-0.5	0.0	0.00	14.66	14.68	4.73	4.64
909	43.7	43.6	0.38	1.1	0.8	0.00	-0.5	0.0	0.00	15.32	15.34	4.31	4.22
910	32.4	32.3	0.28	2.2	2.0	0.01	-0.5	0.0	0.00	15.04	15.06	4.54	4.46
911	33.1	33.1	0.29	1.3	1.0	0.01	-0.6	0.0	0.00	15.63	15.65	4.16	4.08
912	40.2	40.2	0.35	1.1	0.9	0.00	-0.6	0.0	0.00	14.29	14.30	5.13	5.04
913	43.4	43.3	0.38	1.1	0.9	0.00	-0.5	0.0	0.00	15.06	15.08	4.59	4.50
914	37.4	37.4	0.32	1.2	0.9	0.00	-0.5	0.0	0.00	15.55	15.57	4.28	4.19
915	31.4	31.3	0.27	1.0	0.7	0.00	-0.6	0.0	0.00	14.69	14.71	4.87	4.78
916	35.3	35.3	0.31	1.1	0.8	0.00	-0.6	-0.1	0.00	13.16	13.17	5.83	5.74
917	41.4	41.3	0.36	0.9	0.7	0.00	-0.6	0.0	0.00	13.43	13.44	5.43	5.34
918	29.6	29.6	0.26	1.1	0.9	0.00	-0.5	0.0	0.00	13.92	13.93	5.06	4.97
919	24.5	24.5	0.21	1.0	0.8	0.00	-0.5	0.0	0.00	14.37	14.38	4.83	4.75
920	24.6	24.6	0.21	1.0	0.7	0.00	-0.5	0.0	0.00	14.46	14.48	4.78	4.69
921	25.3	25.3	0.22	0.9	0.6	0.00	-0.5	0.0	0.00	14.68	14.70	4.63	4.54
922	25.7	25.7	0.22	0.8	0.6	0.00	-0.5	0.0	0.00	14.90	14.92	4.45	4.37
923	26.4	26.3	0.23	0.9	0.6	0.00	-0.5	0.1	0.00	16.41	16.43	3.45	3.36
924	24.7	24.7	0.21	0.9	0.6	0.00	-0.5	0.0	0.00	15.86	15.88	3.80	3.72
925	20.3	20.3	0.18	1.3	1.0	0.01	-0.5	0.0	0.00	14.93	14.95	4.44	4.35
926	27.5	27.5	0.24	0.9	0.6	0.00	-0.5	0.0	0.00	15.36	15.38	4.17	4.09
927	34.0	33.9	0.29	0.8	0.6	0.00	-0.5	0.0	0.00	15.25	15.27	4.13	4.04
928	39.7	39.6	0.34	0.8	0.6	0.00	-0.6	0.0	0.00	15.68	15.70	3.77	3.68
929	27.4	27.4	0.24	1.8	1.6	0.01	-0.5	0.0	0.00	13.93	13.94	5.01	4.92
930	35.9	35.9	0.31	1.4	1.1	0.01	-0.6	0.0	0.00	16.22	16.24	3.60	3.52
931	21.7	21.7	0.19	1.4	1.2	0.01	-0.5	0.0	0.00	15.67	15.69	3.94	3.86
932	20.7	20.7	0.18	1.2	1.0	0.01	-0.5	0.1	0.00	14.43	14.45	4.80	4.72
933	46.7	46.7	0.40	0.9	0.6	0.00	-0.5	0.1	0.00	15.36	15.38	4.14	4.05
934	28.0	28.0	0.24	1.1	0.9	0.00	-0.5	0.1	0.00	14.45	14.47	4.75	4.67
935	45.0	45.0	0.39	0.8	0.6	0.00	-0.5	0.0	0.00	14.23	14.24	4.89	4.81
936	50.6	50.6	0.44	1.0	0.8	0.00	-0.5	0.1	0.00	13.62	13.63	5.29	5.20
937	39.9	39.9	0.35	0.9	0.6	0.00	-0.5	0.1	0.00	13.72	13.73	5.16	5.07
938	33.5	33.5	0.29	0.9	0.6	0.00	-0.5	0.0	0.00	14.06	14.07	4.83	4.75
939	29.3	29.3	0.25	1.0	0.8	0.00	-0.5	0.0	0.00	14.13	14.14	4.73	4.64
940	25.3	25.3	0.22	1.2	0.9	0.00	-0.6	0.0	0.00	14.62	14.64	4.52	4.43
941	23.2	23.2	0.20	0.9	0.7	0.00	-0.5	0.0	0.00	15.76	15.78	3.97	3.89
942	19.5	19.5	0.17	1.0	0.8	0.00	-0.6	0.0	0.00	16.12	16.14	3.80	3.72
943	22.6	22.6	0.20	2.8	2.6	0.01	-0.6	0.0	0.00	15.26	15.28	4.25	4.16
944	26.6	26.6	0.23	1.5	1.2	0.01	-0.6	0.0	0.00	15.12	15.14	4.45	4.36
945	33.4	33.4	0.29	1.4	1.1	0.01	-0.6	-0.1	0.00	15.50	15.52	4.17	4.08
946	35.4	35.4	0.31	1.1	0.9	0.00	-0.7	-0.1	0.00	14.91	14.93	4.53	4.44
947	30.3	30.3	0.26	1.0	0.8	0.00	-0.6	0.0	0.00	14.93	14.95	4.53	4.44
948	28.7	28.7	0.25	1.0	0.8	0.00	-0.7	-0.2	0.00	14.78	14.80	4.44	4.36
949	24.5	24.5	0.21	1.1	0.9	0.00	-0.6	-0.1	0.00	14.51	14.53	4.58	4.49
950	22.2	22.2	0.19	1.1	0.9	0.00	-0.7	-0.1	0.00	14.68	14.70	4.59	4.50
951	25.2	25.2	0.22	1.0	0.7	0.00	-0.7	-0.1	0.00	14.89	14.91	4.55	4.46
952	24.3	24.3	0.21	1.0	0.8	0.00	-0.6	-0.1	0.00	14.87	14.89	4.58	4.49
953	23.7	23.7	0.21	1.0	0.8	0.00	-0.6	0.0	0.00	15.15	15.17	4.37	4.28
954	23.2	23.2	0.20	1.0	0.8	0.00	-0.6	0.0	0.00	14.76	14.78	4.63	4.54
955	23.1	23.1	0.20	1.0	0.8	0.00	-0.6	-0.1	0.00	14.76	14.78	4.67	4.58
956	22.6	22.6	0.20	0.9	0.7	0.00	-0.6	0.0	0.00	16.34	16.36	3.61	3.53
957	24.1	24.1	0.21	1.0	0.8	0.00	-0.6	-0.1	0.00	15.86	15.88	4.00	3.92
958	30.1	30.1	0.26	1.1	0.8	0.00	-0.6	-0.1	0.00	15.39	15.41	4.12	4.04
959	27.7	27.7	0.24	1.3	1.0	0.01	-0.7	-0.1	0.00	15.71	15.73	3.94	3.86
1000	28.1	28.1	0.24	1.2	1.0	0.01	-0.6	-0.1	0.00	15.71	15.73	4.01	3.92
1001	29.9	29.9	0.26	1.2	1.0	0.01	-0.6	0.0	0.00	15.25	15.27	4.40	4.32
1002	33.2	33.2	0.29	1.3	1.1	0.01	-0.6	0.0	0.00	15.68	15.70	4.15	4.07
1003	36.3	36.2	0.31	1.2	1.0	0.01	-0.6	-0.1	0.00	15.11	15.13	4.51	4.42
1004	37.4	37.4	0.32	1.3	1.0	0.01	-0.6	-0.1	0.00	15.43	15.45	4.34	4.25
1005	40.6	40.6	0.35	1.2	1.0	0.01	-0.6	0.0	0.00	15.11	15.13	4.48	4.40
Ave	30.8	30.8	0.27	1.1	0.9	0.00	-0.6	0.0	0.00	15.01	15.03	4.43	4.34

Table 2
Continuous Emissions Measurements Result
Run 129-1
10/07/14

Time (1-min)	NOx (ppm)	NOx (ppm Cor.)	NOx (lb/hr)	CO (ppm)	CO (ppm Cor.)	CO (lb/hr)	SO2 (ppm)	SO2 (ppm Cor.)	SO2 (lb/hr)	O2 (%)	O2 (% Cor.)	CO2 (%)	CO2 (% Cor.)
1122	23.7	24.0	0.21	0.7	0.5	0.00	-0.9	-0.2	0.00	16.84	16.88	2.96	2.86
1123	24.1	24.4	0.21	0.9	0.7	0.00	-1.0	-0.3	0.00	16.58	16.62	3.55	3.45
1124	35.6	36.1	0.31	0.8	0.7	0.00	-0.9	-0.2	0.00	15.14	15.17	4.45	4.34
1125	41.9	42.4	0.37	0.9	0.7	0.00	-0.9	-0.2	0.00	15.85	15.88	4.00	3.90
1126	52.5	53.2	0.46	1.2	1.0	0.01	-0.9	-0.2	0.00	15.62	15.65	4.21	4.10
1127	60.8	61.6	0.54	1.2	1.0	0.01	-0.9	-0.2	0.00	15.52	15.55	4.37	4.26
1128	59.9	60.7	0.53	1.0	0.8	0.00	-0.9	-0.2	0.00	15.57	15.60	4.31	4.20
1129	52.8	53.5	0.47	0.8	0.6	0.00	-0.9	-0.2	0.00	15.67	15.70	4.23	4.12
1130	47.0	47.6	0.42	1.0	0.8	0.00	-0.9	-0.2	0.00	14.93	14.96	4.56	4.45
1131	39.5	40.0	0.35	1.1	0.9	0.00	-0.9	-0.2	0.00	15.36	15.39	4.32	4.21
1132	35.9	36.4	0.32	1.4	1.2	0.01	-0.9	-0.2	0.00	16.03	16.06	3.79	3.69
1133	23.8	24.1	0.21	1.5	1.3	0.01	-0.9	-0.2	0.00	15.76	15.79	3.92	3.81
1134	20.3	20.5	0.18	1.2	1.0	0.01	-0.9	-0.2	0.00	15.30	15.33	4.11	4.00
1135	29.1	29.4	0.26	0.7	0.5	0.00	-0.9	-0.2	0.00	15.80	15.83	3.72	3.62
1136	24.1	24.4	0.21	0.9	0.7	0.00	-0.9	-0.2	0.00	16.36	16.40	3.41	3.31
1137	19.2	19.4	0.17	0.9	0.7	0.00	-0.9	-0.2	0.00	16.49	16.53	3.41	3.31
1138	23.2	23.5	0.20	0.9	0.7	0.00	-0.9	-0.2	0.00	16.06	16.09	3.80	3.69
1139	24.4	24.7	0.22	0.9	0.7	0.00	-1.0	-0.3	0.00	16.31	16.35	3.76	3.66
1140	25.6	26.0	0.23	3.6	3.5	0.02	-0.9	-0.2	0.00	15.27	15.30	4.45	4.34
1141	48.0	48.6	0.42	0.8	0.6	0.00	-0.9	-0.2	0.00	15.96	15.99	3.94	3.84
1142	56.9	57.6	0.50	0.9	0.7	0.00	-1.0	-0.3	0.00	15.64	15.67	4.07	3.97
1143	50.0	50.6	0.44	0.9	0.7	0.00	-1.0	-0.3	0.00	15.75	15.78	3.95	3.85
1144	41.1	41.6	0.36	1.1	0.9	0.00	-0.9	-0.2	0.00	16.15	16.18	3.54	3.44
1145	38.0	38.5	0.34	1.1	0.9	0.00	-0.9	-0.2	0.00	15.47	15.50	3.88	3.78
1146	34.4	34.8	0.30	1.3	1.2	0.01	-1.0	-0.3	0.00	15.20	15.23	4.21	4.10
1147	40.0	40.5	0.35	1.4	1.2	0.01	-1.0	-0.3	0.00	16.02	16.05	3.73	3.62
1148	35.3	35.8	0.31	1.2	1.0	0.01	-1.0	-0.3	0.00	15.76	15.79	3.80	3.70
1149	29.2	29.6	0.26	1.3	1.1	0.01	-0.9	-0.2	0.00	15.24	15.27	4.19	4.09
1150	37.2	37.7	0.33	1.6	1.4	0.01	-1.0	-0.3	0.00	15.98	16.01	3.75	3.65
1151	33.1	33.5	0.29	1.2	1.0	0.01	-1.0	-0.3	0.00	16.08	16.11	3.57	3.47
1152	24.1	24.4	0.21	1.2	1.1	0.01	-1.0	-0.3	0.00	15.29	15.32	4.15	4.04
1153	27.3	27.7	0.24	1.1	0.9	0.01	-1.0	-0.3	0.00	15.62	15.65	3.90	3.80
1154	26.3	26.6	0.23	1.0	0.8	0.00	-1.0	-0.3	0.00	16.01	16.04	3.71	3.61
1155	26.6	26.9	0.23	1.1	0.9	0.00	-1.0	-0.3	0.00	15.64	15.67	3.97	3.86
1156	31.8	32.2	0.28	1.2	1.0	0.01	-1.0	-0.3	0.00	14.51	14.54	4.84	4.73
1157	40.8	41.3	0.36	1.0	0.8	0.00	-1.0	-0.3	0.00	15.14	15.17	4.45	4.34
1158	51.9	52.6	0.46	1.2	1.0	0.01	-0.9	-0.2	0.00	15.98	16.01	3.78	3.68
1159	29.8	30.2	0.26	1.4	1.2	0.01	-1.0	-0.3	0.00	15.70	15.73	3.99	3.88
1200	39.4	39.9	0.35	1.1	0.9	0.00	-1.0	-0.3	0.00	16.17	16.20	3.73	3.63
1201	42.3	42.9	0.37	1.0	0.8	0.00	-1.0	-0.3	0.00	16.14	16.17	3.76	3.65
1202	38.2	38.7	0.34	0.9	0.7	0.00	-1.0	-0.3	0.00	16.19	16.23	3.71	3.60
1203	34.1	34.5	0.30	1.0	0.9	0.00	-1.0	-0.3	0.00	15.86	15.89	3.79	3.68
1204	29.5	29.9	0.26	0.8	0.7	0.00	-1.0	-0.3	0.00	16.23	16.27	3.47	3.37
1205	23.2	23.5	0.20	1.0	0.8	0.00	-1.0	-0.3	0.00	16.23	16.27	3.50	3.40
1206	20.7	21.0	0.18	1.0	0.8	0.00	-0.9	-0.2	0.00	16.05	16.08	3.72	3.62
1207	20.0	20.3	0.18	0.9	0.8	0.00	-0.9	-0.2	0.00	16.55	16.59	3.42	3.32
1208	19.5	19.8	0.17	1.0	0.8	0.00	-1.0	-0.3	0.00	16.15	16.18	3.66	3.55
1209	18.3	18.5	0.16	0.9	0.7	0.00	-0.9	-0.2	0.00	16.21	16.25	3.62	3.51
1210	19.2	19.5	0.17	0.8	0.6	0.00	-0.9	-0.2	0.00	16.59	16.63	3.40	3.30
1211	19.6	19.9	0.17	0.8	0.7	0.00	-1.0	-0.3	0.00	16.38	16.42	3.47	3.37
1212	23.6	23.9	0.21	0.8	0.6	0.00	-1.0	-0.3	0.00	15.94	15.97	3.81	3.71
1213	32.9	33.4	0.29	0.8	0.6	0.00	-1.0	-0.3	0.00	16.35	16.39	3.52	3.42
1214	28.8	29.2	0.25	1.0	0.8	0.00	-1.0	-0.3	0.00	16.25	16.29	3.38	3.28
1215	19.9	20.2	0.18	0.9	0.8	0.00	-0.9	-0.2	0.00	16.20	16.24	3.53	3.43
1216	18.2	18.5	0.16	0.9	0.7	0.00	-1.0	-0.3	0.00	16.33	16.37	3.51	3.41
1217	18.2	18.4	0.16	0.8	0.6	0.00	-0.9	-0.2	0.00	16.39	16.43	3.51	3.41
1218	19.2	19.4	0.17	0.8	0.6	0.00	-1.0	-0.3	0.00	16.87	16.91	3.16	3.06
1219	19.4	19.6	0.17	0.8	0.6	0.00	-0.9	-0.2	0.00	16.40	16.44	3.53	3.43
1220	19.2	19.4	0.17	0.8	0.6	0.00	-1.0	-0.3	0.00	16.48	16.52	3.50	3.40
1221	20.5	20.7	0.18	0.7	0.6	0.00	-1.0	-0.3	0.00	16.88	16.92	3.27	3.17
1222	21.3	21.6	0.19	0.8	0.6	0.00	-1.0	-0.3	0.00	16.73	16.77	3.29	3.19
1223	25.2	25.5	0.22	0.7	0.5	0.00	-0.9	-0.2	0.00	16.73	16.77	3.22	3.12
1224	25.9	26.2	0.23	0.8	0.6	0.00	-0.9	-0.2	0.00	15.14	15.17	4.21	4.10
1225	24.2	24.5	0.21	0.8	0.6	0.00	-0.9	-0.2	0.00	15.34	15.37	4.19	4.08
1226	27.3	27.7	0.24	1.1	0.9	0.00	-0.9	-0.2	0.00	15.44	15.47	4.17	4.07
1227	24.6	24.9	0.22	1.0	0.8	0.00	-0.9	-0.2	0.00	15.21	15.24	4.32	4.21
1228	19.7	19.9	0.17	0.8	0.6	0.00	-0.9	-0.2	0.00	15.85	15.88	4.00	3.90
1229	37.4	37.8	0.33	1.0	0.9	0.00	-0.9	-0.2	0.00	15.88	15.91	4.14	4.04
1230	60.0	60.8	0.53	1.2	1.0	0.01	-0.8	-0.1	0.00	15.82	15.85	4.25	4.14
1231	58.6	59.4	0.52	1.0	0.9	0.00	-0.9	-0.2	0.00	15.52	15.55	4.43	4.32
1232	80.8	81.8	0.71	1.0	0.8	0.00	-0.8	-0.1	0.00	15.45	15.48	4.50	4.39
1233	90.2	91.4	0.80	1.0	0.8	0.00	-0.9	-0.2	0.00	15.39	15.42	4.46	4.35
1234	90.0	91.2	0.80	0.9	0.8	0.00	-0.8	-0.1	0.00	15.24	15.27	4.42	4.31
1235	85.6	86.7	0.76	1.0	0.8	0.00	-0.7	0.0	0.00	15.32	15.35	4.33	4.22
1236	83.5	84.6	0.74	1.0	0.8	0.00	-0.8	-0.1	0.00	15.01	15.04	4.68	4.56
1237	73.1	74.0	0.65	1.1	1.0	0.01	-0.8	-0.1	0.00	15.47	15.50	4.41	4.30
1238	68.3	69.1	0.60	1.3	1.1	0.01	-0.7	0.0	0.00	15.37	15.40	4.30	4.28
1239	49.1	49.7	0.43	1.3	1.1	0.01	-0.8	-0.1	0.00	15.56	15.59	4.28	4.18
1240	49.4	50.0	0.44	1.3	1.1	0.01	-0.8	-0.1	0.00	15.41	15.44	4.38	4.27
1241	41.3	41.8	0.36	1.3	1.1	0.01	-0.8	-0.1	0.00	14.86	14.89	4.75	4.63
1242	56.3	57.0	0.50	1.3	1.1	0.01	-0.8	-0.1	0.00	15.44	15.47	4.40	4.28
1243	47.9	48.5	0.42	1.1	0.9	0.00	-0.7	0.0	0.00	15.61	15.64	4.13	4.02
1244	35.8	36.3	0.32	2.0	1.8	0.01	-0.8	-0.1	0.00	14.92	14.95	4.55	4.43
1245	66.8	67.6	0.59	1.0	0.9	0.00	-0.7	0.0	0.00	15.78	15.81	4.07	3.96

Table 3
Continuous Emissions Measurements Results
Run 123-1
10/07/14

Time (1-min)	NOx (ppm)	NOx (ppm Cor.)	CO (lb/hr)	CO (ppm)	CO (ppm Cor.)	SO2 (ppm)	SO2 (ppm Cor.)	lb/hr)	O2 (%)	O2 (% Cor.)	CO2 (%)	CO2 (% Cor.)	
1427	28.6	28.8	0.27	0.6	0.4	0.00	-0.8	-0.3	0.00	17.18	17.22	2.79	2.78
1428	27.7	27.8	0.26	0.7	0.5	0.00	-0.8	-0.3	0.00	16.57	16.61	3.25	3.23
1429	20.3	20.4	0.19	0.6	0.4	0.00	-0.9	-0.3	0.00	16.69	16.73	3.23	3.22
1430	18.5	18.6	0.17	0.6	0.4	0.00	-0.8	-0.2	0.00	16.43	16.47	3.47	3.45
1431	17.3	17.4	0.16	0.7	0.5	0.00	-0.8	-0.2	0.00	16.57	16.61	3.37	3.35
1432	18.6	18.7	0.17	0.7	0.5	0.00	-0.8	-0.3	0.00	16.90	16.94	3.18	3.17
1433	21.0	21.1	0.20	0.8	0.6	0.00	-0.8	-0.3	0.00	16.15	16.19	3.74	3.72
1434	32.1	32.3	0.30	0.7	0.5	0.00	-0.8	-0.2	0.00	16.41	16.45	3.57	3.55
1435	28.2	28.4	0.26	0.8	0.6	0.00	-0.8	-0.2	0.00	16.24	16.28	3.64	3.61
1436	21.8	21.9	0.20	2.3	2.1	0.01	-0.8	-0.3	0.00	16.50	16.54	3.44	3.42
1437	20.8	21.0	0.19	5.5	5.3	0.03	-0.8	-0.3	0.00	16.70	16.74	3.10	3.08
1438	19.0	19.2	0.18	5.6	5.5	0.03	-0.8	-0.3	0.00	16.42	16.46	3.29	3.27
1439	20.2	20.3	0.19	4.4	4.2	0.02	-0.8	-0.3	0.00	16.84	16.88	3.17	3.16
1440	21.4	21.5	0.20	4.6	4.5	0.03	-0.8	-0.2	0.00	16.71	16.75	3.20	3.18
1441	19.2	19.3	0.18	4.2	4.0	0.02	-0.8	-0.3	0.00	16.69	16.73	3.24	3.22
1442	21.1	21.2	0.20	3.1	2.9	0.02	-0.8	-0.3	0.00	17.19	17.23	2.90	2.88
1443	21.7	21.8	0.20	2.4	2.2	0.01	-0.9	-0.3	0.00	17.03	17.07	2.93	2.91
1444	20.9	21.0	0.19	1.7	1.5	0.01	-0.9	-0.3	0.00	16.85	16.89	3.10	3.09
1445	25.4	25.6	0.24	1.4	1.2	0.01	-0.9	-0.4	0.00	16.45	16.49	3.55	3.53
1446	28.2	28.4	0.26	1.3	1.1	0.01	-0.8	-0.3	0.00	16.22	16.26	3.55	3.53
1447	30.9	31.2	0.29	1.0	0.8	0.00	-0.9	-0.3	0.00	16.05	16.09	3.62	3.60
1448	28.2	28.4	0.26	0.9	0.7	0.00	-0.9	-0.3	0.00	16.61	16.65	3.34	3.32
1449	23.4	23.5	0.22	0.9	0.7	0.00	-0.9	-0.4	0.00	16.24	16.28	3.59	3.57
1450	19.2	19.3	0.18	0.9	0.7	0.00	-0.8	-0.3	0.00	15.86	15.90	3.93	3.90
1451	35.3	35.5	0.33	0.8	0.6	0.00	-0.9	-0.4	0.00	16.15	16.19	3.84	3.81
1452	46.9	47.3	0.44	0.8	0.6	0.00	-0.9	-0.3	0.00	16.18	16.22	3.85	3.82
1453	37.6	37.8	0.35	0.8	0.6	0.00	-0.9	-0.4	0.00	16.01	16.05	3.89	3.86
1454	27.0	27.2	0.25	0.8	0.6	0.00	-0.9	-0.3	0.00	16.25	16.29	3.68	3.65
1455	19.9	20.0	0.18	0.8	0.7	0.00	-0.8	-0.3	0.00	16.72	16.76	3.37	3.35
1456	18.3	18.4	0.17	0.9	0.7	0.00	-0.9	-0.3	0.00	16.62	16.66	3.22	3.20
1457	18.1	18.2	0.17	0.8	0.6	0.00	-0.9	-0.4	0.00	16.68	16.72	3.17	3.16
1458	18.9	19.0	0.18	0.8	0.6	0.00	-0.9	-0.4	-0.01	16.74	16.78	3.24	3.22
1459	20.4	20.6	0.19	0.7	0.5	0.00	-0.9	-0.3	0.00	17.24	17.29	2.97	2.95
1500	20.9	21.0	0.19	0.8	0.6	0.00	-0.9	-0.3	0.00	17.06	17.10	3.02	3.01
1501	21.7	21.8	0.20	0.7	0.5	0.00	-0.9	-0.3	0.00	17.00	17.04	3.08	3.07
1502	23.4	23.6	0.22	0.7	0.5	0.00	-0.8	-0.3	0.00	17.14	17.18	3.06	3.05
1503	26.3	26.5	0.24	0.7	0.5	0.00	-0.8	-0.3	0.00	17.21	17.26	3.07	3.06
1504	20.3	20.4	0.19	0.7	0.5	0.00	-0.8	-0.3	0.00	16.33	16.37	3.76	3.73
1505	15.2	15.3	0.14	0.7	0.5	0.00	-0.8	-0.3	0.00	16.27	16.31	3.82	3.80
1506	16.4	16.5	0.15	0.8	0.6	0.00	-0.8	-0.3	0.00	16.73	16.77	3.42	3.40
1507	22.9	23.0	0.21	38.3	38.5	0.22	-0.8	-0.3	0.00	15.26	15.29	4.38	4.35
1508	55.5	55.9	0.52	0.8	0.6	0.00	-0.8	-0.3	0.00	16.32	16.36	3.72	3.70
1509	67.0	67.5	0.62	0.8	0.6	0.00	-0.8	-0.2	0.00	15.69	15.73	4.25	4.22
1510	63.7	64.2	0.59	0.8	0.6	0.00	-0.8	-0.2	0.00	15.82	15.86	4.18	4.15
1511	57.8	58.3	0.54	1.0	0.8	0.00	-0.8	-0.2	0.00	15.90	15.94	4.09	4.06
1512	52.7	53.1	0.49	1.0	0.8	0.00	-0.8	-0.3	0.00	15.55	15.59	4.31	4.27
1513	48.3	48.7	0.45	0.9	0.8	0.00	-0.8	-0.2	0.00	15.54	15.58	4.31	4.28
1514	37.2	37.4	0.35	1.3	1.1	0.01	-0.8	-0.2	0.00	15.79	15.83	4.12	4.09
1515	33.8	34.0	0.31	1.0	0.8	0.00	-0.7	-0.2	0.00	15.83	15.87	4.10	4.07
1516	30.7	30.9	0.29	1.0	0.8	0.00	-0.8	-0.2	0.00	16.18	16.22	3.87	3.85
1517	28.9	29.1	0.27	0.9	0.7	0.00	-0.8	-0.3	0.00	16.35	16.39	3.55	3.53
1518	25.6	25.8	0.24	0.9	0.7	0.00	-0.8	-0.3	0.00	16.14	16.18	3.66	3.63
1519	24.1	24.3	0.22	0.9	0.7	0.00	-0.8	-0.3	0.00	16.13	16.17	3.78	3.76
1520	27.8	28.0	0.26	0.8	0.6	0.00	-0.7	-0.2	0.00	15.74	15.78	4.34	4.31
1521	63.1	63.6	0.59	1.0	0.8	0.00	-0.7	-0.1	0.00	16.15	16.19	3.97	3.95
1522	64.9	65.4	0.60	1.2	1.0	0.01	-0.7	-0.2	0.00	15.87	15.91	4.23	4.20
1523	76.5	77.1	0.71	1.1	0.9	0.00	-0.7	-0.1	0.00	15.40	15.44	4.60	4.56
1524	81.6	82.3	0.76	1.1	0.9	0.01	-0.7	-0.2	0.00	15.56	15.60	4.45	4.42
1525	82.0	82.7	0.76	1.1	0.9	0.01	-0.7	-0.2	0.00	15.62	15.66	4.37	4.34
1526	81.8	82.5	0.76	1.0	0.8	0.00	-0.7	-0.1	0.00	15.58	15.62	4.38	4.34
1527	77.3	78.0	0.72	0.9	0.7	0.00	-0.6	-0.1	0.00	15.75	15.79	4.21	4.18
1528	68.7	69.3	0.64	0.8	0.6	0.00	-0.7	-0.2	0.00	15.90	15.94	3.97	3.94
1529	60.3	60.8	0.56	0.8	0.6	0.00	-0.7	-0.1	0.00	16.19	16.23	3.71	3.68
1530	50.9	51.3	0.47	0.8	0.6	0.00	-0.7	-0.1	0.00	16.22	16.26	3.79	3.77
1531	46.1	46.4	0.43	0.7	0.5	0.00	-0.6	-0.1	0.00	16.11	16.15	3.95	3.92
1532	62.3	62.8	0.58	0.8	0.6	0.00	-0.6	-0.1	0.00	15.84	15.88	4.05	4.02
1533	60.3	60.8	0.56	0.9	0.7	0.00	-0.6	-0.1	0.00	16.30	16.34	3.77	3.75
1534	51.5	51.9	0.48	1.0	0.8	0.00	-0.7	-0.2	0.00	16.50	16.54	3.58	3.56
1535	45.1	45.4	0.42	1.4	1.2	0.01	-0.6	-0.1	0.00	16.04	16.08	3.92	3.89
1536	31.6	31.9	0.29	2.1	2.0	0.01	-0.6	-0.1	0.00	16.20	16.24	3.77	3.75
1537	29.8	30.0	0.28	1.4	1.2	0.01	-0.6	-0.1	0.00	16.23	16.27	3.76	3.73
1538	30.3	30.5	0.28	1.2	1.0	0.01	-0.6	0.0	0.00	16.44	16.48	3.61	3.59
1539	29.2	29.4	0.27	1.0	0.8	0.00	-0.6	-0.1	0.00	16.64	16.68	3.31	3.29
1540	28.6	28.8	0.27	0.9	0.8	0.00	-0.7	-0.1	0.00	16.20	16.24	3.62	3.59
1541	32.2	32.5	0.30	0.9	0.7	0.00	-0.6	0.0	0.00	16.14	16.18	3.79	3.76
1542	29.5	29.7	0.27	0.9	0.7	0.00	-0.6	-0.1	0.00	16.31	16.35	3.72	3.70
1543	26.1	26.3	0.24	0.8	0.6	0.00	-0.6	0.0	0.00	16.48	16.52	3.65	3.62
1544	24.0	24.2	0.22	0.8	0.6	0.00	-0.6	-0.1	0.00	16.66	16.70	3.48	3.46
1545	22.3	22.4	0.21	0.8	0.6	0.00	-0.6	0.0	0.00	16.21	16.25	3.80	3.78
1546	20.9	21.0	0.19	0.7	0.5	0.00	-0.6	-0.1	0.00	16.24	16.28	3.80	3.78
1547	22.0	22.2	0.20	0.7	0.5	0.00	-0.7	-0.1	0.00	16.55	16.59	3.63	3.61
1548	21.2	21.4	0.20	0.7	0.5	0.00	-0.6	-0.1	0.00	16.47	16.51	3.61	3.59
1549	20.6	20.8	0.19	0.7	0.5	0.00	-0.6	-0.1	0.00	16.30	16.34	3.69	3.66
1550	20.4	20.6	0.19	0.6	0.4	0.00	-0.6	-0.1	0.00	16.50	16.54	3.45	3.42
1551	19.9</												

Table 4
 Continuous Emissions Measurements Results
 Run IS-2
 10/07/14

Time (1-min)	NOx (ppm)	NOx (ppm Cor.)	NOx (lb/hr)	CO (ppm)	CO (ppm Cor.)	CO (lb/hr)	SO2 (ppm)	SO2 (ppm Cor.)	SO2 (lb/hr)	O2 (%)	O2 (% Cor.)	CO2 (%)	CO2 (% Cor.)
1718	22.9	23.1	0.20	0.8	0.6	0.00	-0.3	0.2	0.00	17.06	17.14	2.69	2.64
1719	25.1	25.3	0.22	0.9	0.7	0.00	-0.4	0.1	0.00	16.61	16.69	3.35	3.29
1720	31.4	31.7	0.27	1.1	0.9	0.00	-0.3	0.2	0.00	16.48	16.55	3.50	3.45
1721	31.5	31.8	0.27	1.0	0.8	0.00	-0.3	0.2	0.00	16.34	16.41	3.65	3.59
1722	50.2	50.7	0.44	1.2	1.0	0.01	-0.3	0.2	0.00	15.85	15.92	4.08	4.02
1723	76.6	77.5	0.67	1.3	1.2	0.01	-0.3	0.2	0.00	16.16	16.23	3.82	3.76
1724	84.6	85.6	0.74	1.3	1.1	0.01	-0.3	0.2	0.00	16.14	16.21	3.81	3.75
1725	85.1	86.1	0.74	1.2	1.1	0.01	-0.3	0.2	0.00	15.83	15.90	3.95	3.90
1726	75.6	76.4	0.66	1.2	1.1	0.01	-0.3	0.2	0.00	15.78	15.85	3.95	3.89
1727	69.8	70.6	0.61	1.3	1.2	0.01	-0.3	0.2	0.00	16.04	16.11	3.67	3.62
1728	72.1	72.9	0.63	1.5	1.3	0.01	-0.4	0.1	0.00	16.15	16.22	3.47	3.41
1729	66.3	67.1	0.58	1.4	1.2	0.01	-0.3	0.2	0.00	15.86	15.93	3.80	3.74
1730	54.1	54.7	0.47	1.4	1.2	0.01	-0.3	0.2	0.00	15.89	15.96	3.84	3.78
1731	56.8	57.4	0.50	1.3	1.2	0.01	-0.3	0.2	0.00	15.94	16.01	3.81	3.75
1732	54.0	54.6	0.47	1.3	1.1	0.01	-0.4	0.2	0.00	16.37	16.44	3.55	3.49
1733	47.9	48.4	0.42	1.3	1.1	0.01	-0.3	0.2	0.00	16.29	16.36	3.52	3.46
1734	41.3	41.8	0.36	1.4	1.2	0.01	-0.3	0.2	0.00	16.10	16.17	3.68	3.63
1735	32.9	33.2	0.29	1.8	1.6	0.01	-0.3	0.2	0.00	15.65	15.72	4.00	3.94
1736	24.9	25.1	0.22	1.7	1.5	0.01	-0.3	0.2	0.00	15.87	15.94	3.75	3.70
1737	23.4	23.6	0.20	1.1	0.9	0.00	-0.3	0.2	0.00	16.59	16.67	3.20	3.15
1738	25.1	25.3	0.22	1.2	1.1	0.01	-0.4	0.1	0.00	16.18	16.25	3.55	3.49
1739	26.8	27.0	0.23	6.3	6.2	0.03	-0.3	0.2	0.00	15.63	15.70	3.99	3.93
1740	52.0	52.5	0.45	1.2	1.0	0.01	-0.3	0.2	0.00	16.54	16.61	3.35	3.30
1741	49.3	49.8	0.43	1.1	1.0	0.01	-0.4	0.1	0.00	16.13	16.20	3.59	3.54
1742	40.8	41.2	0.36	1.4	1.2	0.01	-0.4	0.1	0.00	16.13	16.20	3.60	3.55
1743	39.0	39.4	0.34	1.4	1.2	0.01	-0.4	0.2	0.00	16.24	16.31	3.55	3.50
1744	34.6	35.0	0.30	1.3	1.1	0.01	-0.4	0.1	0.00	16.61	16.69	3.28	3.23
1745	34.2	34.5	0.30	1.1	0.9	0.00	-0.4	0.1	0.00	16.09	16.16	3.50	3.44
1746	33.2	33.6	0.29	1.1	0.9	0.00	-0.4	0.1	0.00	16.08	16.15	3.46	3.40
1747	33.9	34.2	0.30	1.1	0.9	0.00	-0.5	0.0	0.00	16.26	16.33	3.50	3.44
1748	33.3	33.6	0.29	1.1	0.9	0.00	-0.5	0.0	0.00	16.54	16.61	3.32	3.27
1749	33.1	33.5	0.29	1.1	0.9	0.00	-0.5	0.0	0.00	16.02	16.09	3.67	3.62
1750	34.4	34.7	0.30	1.1	0.9	0.00	-0.5	0.0	0.00	15.99	16.06	3.79	3.73
1751	39.9	40.3	0.35	0.9	0.7	0.00	-0.5	0.0	0.00	16.37	16.44	3.57	3.51
1752	51.3	51.9	0.45	0.9	0.7	0.00	-0.5	0.0	0.00	15.90	15.97	3.88	3.82
1753	46.5	46.9	0.41	0.8	0.6	0.00	-0.5	0.0	0.00	16.14	16.21	3.73	3.67
1754	48.1	48.6	0.42	0.9	0.7	0.00	-0.5	0.0	0.00	16.12	16.19	3.52	3.47
1755	53.9	54.5	0.47	0.8	0.6	0.00	-0.5	0.0	0.00	16.27	16.34	3.53	3.47
1756	55.8	56.4	0.49	0.8	0.6	0.00	-0.6	-0.1	0.00	16.06	16.13	3.77	3.72
1757	49.3	49.8	0.43	0.9	0.7	0.00	-0.5	0.0	0.00	15.41	15.48	4.45	4.39
1758	57.0	57.6	0.50	1.4	1.2	0.01	-0.6	-0.1	0.00	15.99	16.06	4.04	3.98
1759	50.8	51.3	0.44	2.5	2.3	0.01	-0.6	-0.1	0.00	16.14	16.21	4.03	3.97
1800	62.7	63.4	0.55	2.5	2.4	0.01	-0.5	0.0	0.00	14.89	14.95	4.90	4.84
1801	80.6	81.5	0.70	2.1	2.0	0.01	-0.6	-0.1	0.00	15.64	15.71	4.31	4.25
1802	93.7	94.8	0.82	2.5	2.4	0.01	-0.5	0.0	0.00	14.73	14.79	4.77	4.71
1803	99.4	100.6	0.87	2.5	2.3	0.01	-0.5	0.0	0.00	14.58	14.64	4.78	4.72
1804	104.6	105.8	0.92	2.0	1.8	0.01	-0.6	-0.1	0.00	15.15	15.21	4.57	4.51
1805	106.2	107.5	0.93	1.9	1.7	0.01	-0.6	-0.1	0.00	14.76	14.82	4.76	4.70
1806	93.4	94.5	0.82	2.4	2.2	0.01	-0.5	0.0	0.00	14.57	14.63	4.90	4.84
1807	99.4	100.6	0.87	1.9	1.7	0.01	-0.5	0.0	0.00	14.65	14.71	4.84	4.78
1808	101.9	103.1	0.89	1.5	1.4	0.01	-0.5	0.0	0.00	15.05	15.11	4.62	4.56
1809	102.2	103.4	0.89	1.4	1.2	0.01	-0.4	0.1	0.00	15.12	15.18	4.50	4.44
1810	101.6	102.8	0.89	1.6	1.4	0.01	-0.5	0.0	0.00	14.83	14.89	4.65	4.59
1811	95.7	96.8	0.84	1.7	1.5	0.01	-0.5	0.0	0.00	14.94	15.00	4.46	4.40
1812	95.3	96.4	0.83	1.5	1.3	0.01	-0.5	0.0	0.00	15.49	15.56	4.18	4.12
1813	93.3	94.4	0.82	1.5	1.3	0.01	-0.6	-0.1	0.00	15.11	15.17	4.48	4.42
1814	77.9	78.8	0.68	1.5	1.3	0.01	-0.6	-0.1	0.00	15.10	15.16	4.50	4.44
1815	84.4	85.4	0.74	1.4	1.3	0.01	-0.5	0.0	0.00	15.34	15.41	4.38	4.32
1816	84.2	85.2	0.74	1.2	1.1	0.01	-0.5	0.0	0.00	15.74	15.81	4.06	4.00
1817	79.6	80.5	0.70	1.2	1.0	0.01	-0.5	0.0	0.00	15.33	15.40	4.34	4.28
Ave	60.1	60.7	0.53	1.5	1.3	0.01	-0.4	0.1	0.00	15.81	15.88	3.93	3.87

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Timestamp	Record Number	O2 (%)	CO2 (%)	SO2 (ppm)	NO (ppm)	NO2 (ppm)	NOx (ppm)	CO (ppm)
10/7/2014 6:57	3660	20.94	0.17	-2.0	-0.1	0.0	-0.1	0.8
10/7/2014 6:58	3661	20.93	0.17	-1.9	-0.1	0.0	-0.1	0.8
10/7/2014 6:59	3662	20.93	0.14	-1.9	-0.1	0.0	-0.1	0.8
10/7/2014 7:00	3663	20.94	-0.01	-1.9	-0.1	0.0	-0.1	0.8
10/7/2014 7:01	3664	20.94	-0.06	-1.9	-0.1	0.0	-0.1	0.8
10/7/2014 7:02	3665	20.93	0.06	-1.9	-0.1	0.0	-0.1	0.8
10/7/2014 7:03	3666	20.94	0.16	-1.9	-0.1	0.0	-0.1	0.7
10/7/2014 7:04	3667	20.94	0.17	-1.9	-0.1	0.0	-0.1	0.8
10/7/2014 7:05	3668	20.94	0.17	-1.9	-0.1	0.0	-0.1	0.8
10/7/2014 7:06	3669	20.94	0.17	-1.9	-0.1	0.0	-0.1	0.8
10/7/2014 7:07	3670	20.94	0.17	-1.9	-0.1	0.0	-0.1	0.8
10/7/2014 7:08	3671	20.94	0.17	-1.9	-0.1	0.0	-0.1	0.8
10/7/2014 7:09	3672	20.94	0.17	-1.9	-0.1	0.0	-0.1	0.7
10/7/2014 7:10	3673	20.92	0.12	-1.9	-0.1	0.0	-0.1	0.8
10/7/2014 7:11	3674	20.92	-0.03	-1.9	-0.1	0.0	-0.1	0.8
10/7/2014 7:12	3675	20.92	-0.03	-1.9	-0.1	0.0	-0.1	0.8
10/7/2014 7:13	3676	20.93	0.11	-1.9	-0.1	0.0	-0.1	0.8
10/7/2014 7:14	3677	20.83	0.17	-1.9	-0.1	0.0	-0.1	0.8
10/7/2014 7:15	3678	21.02	15.75	-1.7	-0.1	-0.1	-0.1	0.2
10/7/2014 7:16	3679	21.14	19.99	-1.5	-0.1	-0.1	-0.1	-0.1
10/7/2014 7:17	3680	21.16	20.56	-1.1	-0.1	-0.1	-0.1	0.0
10/7/2014 7:18	3681	3.24	2.49	77.1	31.0	-3.4	17.0	48.7
10/7/2014 7:19	3682	0.06	0.13	91.8	96.1	0.4	96.5	90.3
10/7/2014 7:20	3683	0.08	0.11	94.4	95.9	-0.6	95.4	NAN
10/7/2014 7:21	3684	0.04	0.10	99.6	131.1	4.9	136.1	NAN
10/7/2014 7:22	3685	0.04	0.06	99.6	183.1	-0.1	183.0	NAN
10/7/2014 7:23	3686	0.03	-0.01	99.6	183.2	-0.3	183.0	NAN
10/7/2014 7:24	3687	0.03	-0.08	99.7	180.7	0.2	180.9	NAN
10/7/2014 7:25	3688	15.29	10.73	18.2	160.3	1.4	151.1	NAN
10/7/2014 7:26	3689	21.12	20.37	0.2	7.3	-1.1	1.6	0.8
10/7/2014 7:27	3690	21.14	20.45	0.1	0.1	0.1	0.2	0.0
10/7/2014 7:28	3691	21.17	20.60	0.1	0.0	0.0	0.1	0.0
10/7/2014 7:29	3692	5.51	4.45	89.9	21.1	7.5	26.7	NAN
10/7/2014 7:30	3693	0.06	0.12	99.7	171.9	2.7	174.7	NAN
10/7/2014 7:31	3694	0.05	0.12	99.7	178.8	-0.4	178.5	NAN
10/7/2014 7:32	3695	0.04	0.10	99.7	178.9	-0.3	178.7	NAN
10/7/2014 7:33	3696	0.04	0.09	94.8	176.9	1.6	178.7	NAN
10/7/2014 7:34	3697	0.03	0.10	92.0	109.9	0.2	109.0	92.3
10/7/2014 7:35	3698	0.03	0.10	92.2	93.9	-0.1	94.0	90.9
10/7/2014 7:36	3699	5.07	5.58	35.3	90.1	3.6	93.8	65.1
10/7/2014 7:37	3700	10.00	10.07	0.7	5.3	10.9	16.3	1.5
10/7/2014 7:38	3701	10.01	10.06	0.6	0.1	0.1	0.2	0.3
10/7/2014 7:39	3702	10.01	10.06	0.5	0.0	0.0	0.1	0.3

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Timestamp	Record Number	O2 (%)	CO2 (%)	SO2 (ppm)	NO (ppm)	NO2 (ppm)	NOx (ppm)	CO (ppm)
10/7/2014 7:40	3703	8.28	8.02	17.3	0.0	0.0	0.0	2.6
10/7/2014 7:41	3704	0.04	0.13	49.6	30.8	-3.8	24.3	42.2
10/7/2014 7:42	3705	0.03	0.03	49.9	49.7	0.3	50.2	47.9
10/7/2014 7:43	3706	0.03	-0.07	49.9	49.8	0.2	50.1	49.6
10/7/2014 7:44	3707	0.03	-0.09	49.8	49.8	0.2	50.1	50.2
10/7/2014 7:45	3708	17.50	-0.04	3.1	33.5	7.3	40.9	20.4
10/7/2014 7:46	3709	20.64	0.05	0.0	0.3	0.1	0.4	0.9
10/7/2014 7:47	3710	20.64	0.14	-0.3	0.0	0.0	0.1	0.9
10/7/2014 7:48	3711	20.64	0.17	-0.4	0.0	0.0	0.0	0.9
10/7/2014 7:49	3712	20.64	0.16	-0.3	0.0	0.0	0.0	0.9
10/7/2014 7:50	3713	20.64	0.17	-0.4	0.0	0.0	0.0	0.9
10/7/2014 7:51	3714	20.64	0.16	-0.4	0.0	0.0	0.0	0.9
10/7/2014 7:52	3715	20.64	0.16	-0.4	0.0	0.0	0.0	0.9
10/7/2014 7:53	3716	20.64	0.17	-0.4	0.0	0.0	0.0	0.9
10/7/2014 7:54	3717	20.64	0.17	-0.4	0.0	0.0	0.0	0.9
10/7/2014 7:55	3718	20.64	0.16	-0.5	0.0	0.0	0.0	0.9
10/7/2014 7:56	3719	20.64	0.13	-0.5	0.0	0.0	0.0	0.9
10/7/2014 7:57	3720	20.64	0.03	-0.5	0.0	0.0	0.0	0.9
10/7/2014 7:58	3721	20.64	-0.03	-0.5	0.0	0.0	0.0	0.9
10/7/2014 7:59	3722	20.64	-0.03	-0.5	0.0	0.0	0.0	0.9
10/7/2014 8:00	3723	20.64	0.07	-0.5	0.0	0.0	0.0	0.9
10/7/2014 8:01	3724	20.64	0.16	-0.5	0.0	0.0	0.0	0.9
10/7/2014 8:02	3725	20.64	0.17	-0.5	0.0	0.0	0.0	0.9
10/7/2014 8:03	3726	20.64	0.17	-0.5	0.0	0.0	0.0	0.9
10/7/2014 8:04	3727	20.64	0.17	-0.5	0.0	0.0	0.0	0.9
10/7/2014 8:05	3728	20.64	0.17	-0.5	0.0	0.0	0.0	0.9
10/7/2014 8:06	3729	20.64	0.17	-0.6	0.0	0.0	0.0	0.9
10/7/2014 8:07	3730	20.64	0.17	-0.5	0.0	0.0	0.0	0.9
10/7/2014 8:08	3731	20.63	0.17	-0.5	0.0	0.0	0.0	0.9
10/7/2014 8:09	3732	20.63	0.09	-0.5	0.0	0.0	0.0	0.9
10/7/2014 8:10	3733	20.63	-0.01	-0.5	0.0	0.0	0.0	0.9
10/7/2014 8:11	3734	20.63	-0.03	-0.5	0.0	0.0	0.0	0.9
10/7/2014 8:12	3735	20.62	0.08	-0.6	0.0	0.0	0.0	0.9
10/7/2014 8:13	3736	20.62	0.17	-0.5	0.0	0.0	0.0	0.9
10/7/2014 8:14	3737	20.61	0.17	-0.5	0.0	0.0	0.0	0.9
10/7/2014 8:15	3738	20.61	0.18	-0.5	0.0	0.0	0.0	0.9
10/7/2014 8:16	3739	20.61	0.11	-0.5	0.0	0.0	0.0	0.9
10/7/2014 8:17	3740	20.61	0.08	-0.6	0.0	0.0	0.0	0.9
10/7/2014 8:18	3741	20.60	0.07	-0.6	0.0	0.0	0.0	0.9
10/7/2014 8:19	3742	20.60	0.07	-0.5	0.0	0.0	0.0	0.9
10/7/2014 8:20	3743	20.61	0.04	-0.5	-0.1	0.0	0.0	0.9
10/7/2014 8:21	3744	20.61	-0.07	-0.5	-0.1	0.0	0.0	0.9
10/7/2014 8:22	3745	20.78	-0.13	-0.6	-0.1	0.0	0.0	0.9

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Timestamp	Record Number	O2 (%)	CO2 (%)	SO2 (ppm)	NO (ppm)	NO2 (ppm)	NOx (ppm)	CO (ppm)
10/7/2014 8:23	3746	16.88	3.13	-0.1	0.7	1.7	2.5	1.3
10/7/2014 8:24	3747	10.02	9.79	-0.3	6.1	3.3	9.6	0.6
10/7/2014 8:25	3748	10.00	9.87	-0.5	0.0	0.0	0.0	0.3
10/7/2014 8:26	3749	9.99	9.90	1.4	-0.1	0.0	0.0	0.3
10/7/2014 8:27	3750	1.22	0.99	85.5	29.8	-3.0	19.1	56.8
10/7/2014 8:28	3751	0.07	0.05	89.7	91.8	-0.6	91.3	94.1
10/7/2014 8:29	3752	0.07	-0.05	76.3	92.1	-0.4	91.7	92.2
10/7/2014 8:30	3753	0.05	-0.07	47.9	59.8	9.8	69.7	55.0
10/7/2014 8:31	3754	0.04	-0.07	48.5	49.2	0.0	49.3	49.8
10/7/2014 8:32	3755	8.24	1.16	23.6	48.1	1.0	49.3	37.6
10/7/2014 8:33	3756	16.76	2.71	0.8	21.8	3.0	25.1	1.5
10/7/2014 8:34	3757	16.77	2.71	0.2	18.5	-0.1	18.6	0.7
10/7/2014 8:35	3758	16.83	2.75	0.0	18.4	0.0	18.6	0.7
10/7/2014 8:36	3759	16.85	2.85	-0.1	18.2	0.5	19.0	0.8
10/7/2014 8:37	3760	17.00	2.79	-0.2	19.0	-0.8	18.4	0.7
10/7/2014 8:38	3761	17.06	2.73	-0.2	18.1	1.2	19.6	0.7
10/7/2014 8:39	3762	17.00	2.77	-0.3	19.8	-1.2	18.9	0.7
10/7/2014 8:40	3763	16.86	2.85	-0.4	18.6	0.7	19.5	0.7
10/7/2014 8:41	3764	16.78	2.93	-0.4	18.4	0.2	18.8	0.7
10/7/2014 8:42	3765	16.80	2.92	-0.4	18.2	0.2	18.7	0.7
10/7/2014 8:43	3766	16.78	2.92	-0.3	18.3	0.5	19.0	0.7
10/7/2014 8:44	3767	16.85	2.78	-0.4	19.1	-0.3	19.1	0.7
10/7/2014 8:45	3768	17.07	2.55	-0.3	19.1	0.1	19.4	0.7
10/7/2014 8:46	3769	17.06	2.57	-0.4	18.7	0.3	19.2	0.7
10/7/2014 8:47	3770	16.92	2.78	-0.4	18.8	0.1	19.1	0.7
10/7/2014 8:48	3771	16.78	2.91	-0.3	18.4	0.8	19.5	0.7
10/7/2014 8:49	3772	16.82	2.90	-0.4	18.2	0.4	18.8	0.7
10/7/2014 8:50	3773	17.32	2.57	-0.4	17.9	0.0	18.1	1.0
10/7/2014 8:51	3774	14.92	4.82	-0.4	27.6	-1.1	26.5	3.5
10/7/2014 8:52	3775	14.96	4.72	-0.4	59.8	-3.9	55.8	1.9
10/7/2014 8:53	3776	15.58	4.36	-0.4	63.1	3.4	66.7	1.5
10/7/2014 8:54	3777	15.11	4.59	-0.4	60.7	-1.1	59.7	1.1
10/7/2014 8:55	3778	15.15	4.53	-0.3	72.4	-1.6	70.9	0.9
10/7/2014 8:56	3779	14.80	4.63	-0.4	81.3	1.3	82.7	0.9
10/7/2014 8:57	3780	14.66	4.74	-0.4	79.9	0.8	80.8	0.9
10/7/2014 8:58	3781	15.17	4.51	-0.5	69.7	0.2	70.0	1.3
10/7/2014 8:59	3782	15.19	4.40	-0.4	61.0	-0.2	61.0	1.4
10/7/2014 9:00	3783	15.01	4.52	-0.5	53.6	-0.8	53.0	2.1
10/7/2014 9:01	3784	13.94	5.23	-0.5	38.3	-0.5	37.9	2.8
10/7/2014 9:02	3785	13.74	5.33	-0.5	53.5	-0.1	53.6	0.9
10/7/2014 9:03	3786	13.94	5.14	-0.5	41.8	0.4	42.4	1.2
10/7/2014 9:04	3787	14.22	4.90	-0.6	38.7	-0.4	38.5	1.2
10/7/2014 9:05	3788	14.40	4.68	-0.5	37.0	0.6	37.8	1.2

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Timestamp	Record Number	O2 (%)	CO2 (%)	SO2 (ppm)	NO (ppm)	NO2 (ppm)	NOx (ppm)	CO (ppm)
10/7/2014 9:06	3789	15.98	3.50	-0.6	33.9	1.5	35.6	1.0
10/7/2014 9:07	3790	15.99	3.56	-0.5	31.6	1.3	33.2	1.3
10/7/2014 9:08	3791	14.66	4.73	-0.5	36.7	0.5	37.5	0.8
10/7/2014 9:09	3792	15.32	4.31	-0.5	42.8	0.7	43.7	1.1
10/7/2014 9:10	3793	15.04	4.54	-0.5	32.1	0.1	32.4	2.2
10/7/2014 9:11	3794	15.63	4.16	-0.6	32.7	0.2	33.1	1.3
10/7/2014 9:12	3795	14.29	5.13	-0.6	39.1	0.9	40.2	1.1
10/7/2014 9:13	3796	15.06	4.59	-0.5	41.5	1.7	43.4	1.1
10/7/2014 9:14	3797	15.55	4.28	-0.5	35.1	2.1	37.4	1.2
10/7/2014 9:15	3798	14.69	4.87	-0.6	31.5	-0.3	31.4	1.0
10/7/2014 9:16	3799	13.16	5.83	-0.6	36.1	-0.9	35.3	1.1
10/7/2014 9:17	3800	13.43	5.43	-0.6	40.8	0.4	41.4	0.9
10/7/2014 9:18	3801	13.92	5.06	-0.5	28.3	1.0	29.6	1.1
10/7/2014 9:19	3802	14.37	4.83	-0.5	24.4	-0.1	24.5	1.0
10/7/2014 9:20	3803	14.46	4.78	-0.5	24.4	0.0	24.6	1.0
10/7/2014 9:21	3804	14.68	4.63	-0.5	24.9	0.2	25.3	0.9
10/7/2014 9:22	3805	14.90	4.45	-0.5	25.5	0.0	25.7	0.8
10/7/2014 9:23	3806	16.41	3.45	-0.5	25.0	1.1	26.4	0.9
10/7/2014 9:24	3807	15.86	3.80	-0.5	24.0	0.5	24.7	0.9
10/7/2014 9:25	3808	14.93	4.44	-0.5	19.7	0.4	20.3	1.3
10/7/2014 9:26	3809	15.36	4.17	-0.5	27.0	0.3	27.5	0.9
10/7/2014 9:27	3810	15.25	4.13	-0.5	33.7	0.1	34.0	0.8
10/7/2014 9:28	3811	15.68	3.77	-0.6	38.6	0.8	39.7	0.8
10/7/2014 9:29	3812	13.93	5.01	-0.5	28.3	-1.1	27.4	1.8
10/7/2014 9:30	3813	16.22	3.60	-0.6	33.9	1.8	35.9	1.4
10/7/2014 9:31	3814	15.67	3.94	-0.5	20.5	0.9	21.7	1.4
10/7/2014 9:32	3815	14.43	4.80	-0.5	20.0	0.4	20.7	1.2
10/7/2014 9:33	3816	15.36	4.14	-0.5	46.4	0.1	46.7	0.9
10/7/2014 9:34	3817	14.45	4.75	-0.5	27.2	0.6	28.0	1.1
10/7/2014 9:35	3818	14.23	4.89	-0.5	43.7	1.1	45.0	0.8
10/7/2014 9:36	3819	13.62	5.29	-0.5	49.0	1.4	50.6	1.0
10/7/2014 9:37	3820	13.72	5.16	-0.5	39.0	0.7	39.9	0.9
10/7/2014 9:38	3821	14.06	4.83	-0.5	33.0	0.3	33.5	0.9
10/7/2014 9:39	3822	14.13	4.73	-0.5	28.5	0.6	29.3	1.0
10/7/2014 9:40	3823	14.62	4.52	-0.6	25.2	-0.1	25.3	1.2
10/7/2014 9:41	3824	15.76	3.97	-0.5	22.0	1.0	23.2	0.9
10/7/2014 9:42	3825	16.12	3.80	-0.6	19.1	0.2	19.5	1.0
10/7/2014 9:43	3826	15.26	4.25	-0.6	22.8	-0.4	22.6	2.8
10/7/2014 9:44	3827	15.12	4.45	-0.6	24.8	1.5	26.6	1.5
10/7/2014 9:45	3828	15.50	4.17	-0.6	32.8	0.4	33.4	1.4
10/7/2014 9:46	3829	14.91	4.53	-0.7	35.2	0.1	35.4	1.1
10/7/2014 9:47	3830	14.93	4.53	-0.6	30.4	-0.2	30.3	1.0
10/7/2014 9:48	3831	14.78	4.44	-0.7	27.9	0.6	28.7	1.0

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Timestamp	Record Number	O2 (%)	CO2 (%)	SO2 (ppm)	NO (ppm)	NO2 (ppm)	NOx (ppm)	CO (ppm)
10/7/2014 9:49	3832	14.51	4.58	-0.6	23.4	0.9	24.5	1.1
10/7/2014 9:50	3833	14.68	4.59	-0.7	21.9	0.1	22.2	1.1
10/7/2014 9:51	3834	14.89	4.55	-0.7	24.8	0.1	25.2	1.0
10/7/2014 9:52	3835	14.87	4.58	-0.6	23.5	0.5	24.3	1.0
10/7/2014 9:53	3836	15.15	4.37	-0.6	23.1	0.4	23.7	1.0
10/7/2014 9:54	3837	14.76	4.63	-0.6	22.6	0.4	23.2	1.0
10/7/2014 9:55	3838	14.76	4.67	-0.6	22.8	0.1	23.1	1.0
10/7/2014 9:56	3839	16.34	3.61	-0.6	22.2	0.1	22.6	0.9
10/7/2014 9:57	3840	15.86	4.00	-0.6	24.5	-0.6	24.1	1.0
10/7/2014 9:58	3841	15.39	4.12	-0.6	30.4	-0.5	30.1	1.1
10/7/2014 9:59	3842	15.71	3.94	-0.7	27.7	-0.2	27.7	1.3
10/7/2014 10:00	3843	15.71	4.01	-0.6	27.3	0.6	28.1	1.2
10/7/2014 10:01	3844	15.25	4.40	-0.6	29.4	0.3	29.9	1.2
10/7/2014 10:02	3845	15.68	4.15	-0.6	33.1	0.0	33.2	1.3
10/7/2014 10:03	3846	15.11	4.51	-0.6	34.9	1.2	36.3	1.2
10/7/2014 10:04	3847	15.43	4.34	-0.6	36.5	0.7	37.4	1.3
10/7/2014 10:05	3848	15.11	4.48	-0.6	39.7	0.6	40.6	1.2
10/7/2014 10:06	3849	14.85	4.68	-0.6	41.2	0.2	41.7	1.3
10/7/2014 10:07	3850	15.27	4.43	-0.6	36.8	0.8	37.8	1.4
10/7/2014 10:08	3851	14.86	4.51	-0.6	37.7	0.8	38.7	1.4
10/7/2014 10:09	3852	14.71	4.57	-0.6	38.6	0.3	39.0	1.3
10/7/2014 10:10	3853	15.15	4.44	-0.6	41.4	1.4	43.1	1.3
10/7/2014 10:11	3854	14.75	4.69	-0.6	45.4	0.7	46.2	1.3
10/7/2014 10:12	3855	13.77	4.84	1.0	46.5	0.8	47.5	1.6
10/7/2014 10:13	3856	9.87	9.91	0.1	31.5	-2.4	27.9	2.8
10/7/2014 10:14	3857	9.98	10.00	-0.5	0.1	0.1	0.2	0.2
10/7/2014 10:15	3858	9.97	10.01	-0.6	0.0	0.0	0.1	0.2
10/7/2014 10:16	3859	4.01	3.87	60.6	3.7	3.4	7.1	30.8
10/7/2014 10:17	3860	0.07	0.16	88.5	86.1	-2.6	81.7	92.8
10/7/2014 10:18	3861	0.06	0.01	89.2	90.3	-0.4	90.0	93.6
10/7/2014 10:19	3862	0.05	-0.07	70.6	90.5	-0.3	90.2	89.7
10/7/2014 10:20	3863	0.03	0.03	47.4	60.6	1.7	62.5	52.5
10/7/2014 10:21	3864	0.03	0.10	47.8	48.3	0.0	48.5	49.5
10/7/2014 10:22	3865	0.03	0.10	47.9	48.3	0.0	48.5	49.5
10/7/2014 10:23	3866	0.03	0.10	47.9	48.4	0.0	48.5	49.5
10/7/2014 10:24	3867	16.83	0.18	15.3	34.9	5.5	40.6	21.8
10/7/2014 10:25	3868	20.83	0.22	2.4	0.6	-0.2	0.5	0.9
10/7/2014 10:26	3869	20.86	0.21	1.1	0.1	0.0	0.2	0.9
10/7/2014 10:27	3870	20.88	0.19	0.5	0.1	0.0	0.1	0.8
10/7/2014 10:28	3871	20.89	0.09	0.1	0.0	0.0	0.1	0.8
10/7/2014 10:29	3872	20.91	0.04	-0.1	0.0	0.0	0.0	0.8
10/7/2014 10:30	3873	20.91	0.15	-0.4	0.0	0.0	0.0	0.8
10/7/2014 10:31	3874	20.91	0.20	-0.5	0.0	0.0	0.0	0.8

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Timestamp	Record Number	O2 (%)	CO2 (%)	SO2 (ppm)	NO (ppm)	NO2 (ppm)	NOx (ppm)	CO (ppm)
10/7/2014 10:32	3875	20.91	0.20	-0.5	0.0	0.0	0.0	0.8
10/7/2014 10:33	3876	20.91	0.20	-0.5	0.0	0.0	0.0	0.8
10/7/2014 10:34	3877	20.92	0.20	-0.7	0.0	0.0	0.0	0.8
10/7/2014 10:35	3878	20.91	0.20	-0.7	0.0	0.0	0.0	0.8
10/7/2014 10:36	3879	20.91	0.20	-0.8	0.0	0.0	0.0	0.7
10/7/2014 10:37	3880	20.91	0.16	-0.7	0.0	0.0	0.0	0.8
10/7/2014 10:38	3881	20.91	0.05	-0.8	0.0	0.0	0.0	0.8
10/7/2014 10:39	3882	20.92	0.05	-0.8	0.0	0.0	0.0	0.8
10/7/2014 10:40	3883	20.94	0.14	-0.8	0.0	0.0	0.0	0.8
10/7/2014 10:41	3884	20.94	0.16	-0.8	0.0	0.0	0.0	0.8
10/7/2014 10:42	3885	20.94	0.17	-0.9	0.0	0.0	0.0	0.8
10/7/2014 10:43	3886	20.94	0.17	-0.8	0.0	0.0	0.0	0.8
10/7/2014 10:44	3887	20.93	0.17	-0.9	0.0	0.0	0.0	0.8
10/7/2014 10:45	3888	20.94	0.16	-0.9	0.0	0.0	0.0	0.8
10/7/2014 10:46	3889	20.94	0.16	-1.0	0.0	0.0	0.0	0.8
10/7/2014 10:47	3890	20.94	0.04	-0.9	0.0	0.0	0.0	0.8
10/7/2014 10:48	3891	20.94	-0.05	-1.0	0.0	0.0	0.0	0.8
10/7/2014 10:49	3892	20.94	0.09	-0.9	0.0	0.0	0.0	0.8
10/7/2014 10:50	3893	20.95	0.15	-1.0	0.0	0.0	0.0	0.8
10/7/2014 10:51	3894	20.94	0.17	-1.0	0.0	0.0	0.0	0.8
10/7/2014 10:52	3895	20.94	0.17	-1.1	0.0	0.0	0.0	0.8
10/7/2014 10:53	3896	20.94	0.16	-1.1	0.0	0.0	0.0	0.8
10/7/2014 10:54	3897	20.94	0.17	-1.0	0.0	0.0	0.0	0.8
10/7/2014 10:55	3898	20.94	0.17	-1.0	0.0	0.0	0.0	0.8
10/7/2014 10:56	3899	20.94	0.08	-1.0	0.0	0.0	0.0	0.8
10/7/2014 10:57	3900	20.94	-0.03	-1.0	-0.1	0.0	0.0	0.8
10/7/2014 10:58	3901	20.94	0.06	-1.1	0.0	0.0	0.0	0.8
10/7/2014 10:59	3902	20.94	0.16	-1.1	0.0	0.0	0.0	0.8
10/7/2014 11:00	3903	20.94	0.17	-1.1	0.0	0.0	0.0	0.8
10/7/2014 11:01	3904	20.94	0.15	-1.2	0.0	0.0	0.0	0.8
10/7/2014 11:02	3905	20.93	0.13	-1.1	0.0	0.0	0.0	0.8
10/7/2014 11:03	3906	20.91	0.22	-1.1	0.0	0.0	0.0	0.8
10/7/2014 11:04	3907	20.91	0.26	-1.1	0.0	0.0	0.0	0.8
10/7/2014 11:05	3908	20.88	0.26	-1.1	0.0	0.0	0.0	0.8
10/7/2014 11:06	3909	20.88	0.14	-1.1	0.0	0.0	0.0	0.8
10/7/2014 11:07	3910	20.88	0.15	-1.2	0.0	0.0	0.0	0.8
10/7/2014 11:08	3911	17.74	2.50	-1.1	5.2	-1.2	4.1	0.7
10/7/2014 11:09	3912	16.79	3.14	-1.0	21.7	1.2	23.2	0.8
10/7/2014 11:10	3913	16.97	3.03	-1.0	23.1	-0.4	22.9	0.8
10/7/2014 11:11	3914	17.02	2.96	-1.1	22.8	0.5	23.5	0.8
10/7/2014 11:12	3915	16.95	2.94	-1.1	22.7	-0.5	22.4	0.8
10/7/2014 11:13	3916	16.83	2.97	-1.0	22.7	0.4	23.3	0.8
10/7/2014 11:14	3917	16.63	3.11	-1.1	22.3	0.0	22.5	0.7

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Timestamp	Record Number	O2 (%)	CO2 (%)	SO2 (ppm)	NO (ppm)	NO2 (ppm)	NOx (ppm)	CO (ppm)
10/7/2014 11:15	3918	16.66	2.95	-1.0	22.5	0.2	23.0	0.7
10/7/2014 11:16	3919	16.86	2.78	-1.0	22.7	-0.1	22.9	0.7
10/7/2014 11:17	3920	17.11	2.73	-1.0	24.0	-0.1	24.1	0.7
10/7/2014 11:18	3921	16.80	2.99	-1.0	23.8	-0.3	23.7	0.7
10/7/2014 11:19	3922	16.57	3.12	-1.0	22.8	0.6	23.6	0.7
10/7/2014 11:20	3923	16.44	3.25	-1.0	23.0	-0.1	23.2	0.7
10/7/2014 11:21	3924	16.45	3.24	-0.9	22.5	0.1	22.9	0.7
10/7/2014 11:22	3925	16.84	2.96	-0.9	22.7	0.8	23.7	0.7
10/7/2014 11:23	3926	16.58	3.55	-1.0	24.7	-0.8	24.1	0.9
10/7/2014 11:24	3927	15.14	4.45	-0.9	37.0	-1.5	35.6	0.8
10/7/2014 11:25	3928	15.85	4.00	-0.9	39.9	1.8	41.9	0.9
10/7/2014 11:26	3929	15.62	4.21	-0.9	51.7	0.7	52.5	1.2
10/7/2014 11:27	3930	15.52	4.37	-0.9	58.3	2.2	60.8	1.2
10/7/2014 11:28	3931	15.57	4.31	-0.9	57.3	2.3	59.9	1.0
10/7/2014 11:29	3932	15.67	4.23	-0.9	51.3	1.3	52.8	0.8
10/7/2014 11:30	3933	14.93	4.56	-0.9	43.1	3.8	47.0	1.0
10/7/2014 11:31	3934	15.36	4.32	-0.9	38.6	0.7	39.5	1.1
10/7/2014 11:32	3935	16.03	3.79	-0.9	35.7	0.0	35.9	1.4
10/7/2014 11:33	3936	15.76	3.92	-0.9	26.1	-2.6	23.8	1.5
10/7/2014 11:34	3937	15.30	4.11	-0.9	18.9	1.2	20.3	1.2
10/7/2014 11:35	3938	15.80	3.72	-0.9	30.0	-1.2	29.1	0.7
10/7/2014 11:36	3939	16.36	3.41	-0.9	25.0	-1.1	24.1	0.9
10/7/2014 11:37	3940	16.49	3.41	-0.9	19.3	-0.3	19.2	0.9
10/7/2014 11:38	3941	16.06	3.80	-0.9	22.1	0.8	23.2	0.9
10/7/2014 11:39	3942	16.31	3.76	-1.0	24.5	-0.4	24.4	0.9
10/7/2014 11:40	3943	15.27	4.45	-0.9	24.3	1.1	25.6	3.6
10/7/2014 11:41	3944	15.96	3.94	-0.9	47.8	-0.2	48.0	0.8
10/7/2014 11:42	3945	15.64	4.07	-1.0	56.8	0.0	56.9	0.9
10/7/2014 11:43	3946	15.75	3.95	-1.0	48.7	1.0	50.0	0.9
10/7/2014 11:44	3947	16.15	3.54	-0.9	40.8	0.0	41.1	1.1
10/7/2014 11:45	3948	15.47	3.88	-0.9	38.0	-0.2	38.0	1.1
10/7/2014 11:46	3949	15.20	4.21	-1.0	32.6	1.6	34.4	1.3
10/7/2014 11:47	3950	16.02	3.73	-1.0	40.2	-0.4	40.0	1.4
10/7/2014 11:48	3951	15.76	3.80	-1.0	34.4	0.7	35.3	1.2
10/7/2014 11:49	3952	15.24	4.19	-0.9	27.6	1.4	29.2	1.3
10/7/2014 11:50	3953	15.98	3.75	-1.0	36.2	1.0	37.2	1.6
10/7/2014 11:51	3954	16.08	3.57	-1.0	30.9	1.9	33.1	1.2
10/7/2014 11:52	3955	15.29	4.15	-1.0	21.6	2.1	24.1	1.2
10/7/2014 11:53	3956	15.62	3.90	-1.0	27.4	-0.4	27.3	1.1
10/7/2014 11:54	3957	16.01	3.71	-1.0	26.0	0.1	26.3	1.0
10/7/2014 11:55	3958	15.64	3.97	-1.0	25.5	0.8	26.6	1.1
10/7/2014 11:56	3959	14.51	4.84	-1.0	29.6	2.0	31.8	1.2
10/7/2014 11:57	3960	15.14	4.45	-1.0	39.7	0.8	40.8	1.0

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Timestamp	Record Number	O2 (%)	CO2 (%)	SO2 (ppm)	NO (ppm)	NO2 (ppm)	NOx (ppm)	CO (ppm)
10/7/2014 11:58	3961	15.98	3.78	-0.9	49.0	2.7	51.9	1.2
10/7/2014 11:59	3962	15.70	3.99	-1.0	30.0	-0.5	29.8	1.4
10/7/2014 12:00	3963	16.17	3.73	-1.0	38.5	0.7	39.4	1.1
10/7/2014 12:01	3964	16.14	3.76	-1.0	41.2	0.9	42.3	1.0
10/7/2014 12:02	3965	16.19	3.71	-1.0	36.7	1.3	38.2	0.9
10/7/2014 12:03	3966	15.86	3.79	-1.0	35.3	-1.4	34.1	1.0
10/7/2014 12:04	3967	16.23	3.47	-1.0	28.5	0.9	29.5	0.8
10/7/2014 12:05	3968	16.23	3.50	-1.0	23.4	-0.4	23.2	1.0
10/7/2014 12:06	3969	16.05	3.72	-0.9	20.1	0.5	20.7	1.0
10/7/2014 12:07	3970	16.55	3.42	-0.9	19.5	0.2	20.0	0.9
10/7/2014 12:08	3971	16.15	3.66	-1.0	19.1	0.2	19.5	1.0
10/7/2014 12:09	3972	16.21	3.62	-0.9	18.0	0.0	18.3	0.9
10/7/2014 12:10	3973	16.59	3.40	-0.9	18.9	0.1	19.2	0.8
10/7/2014 12:11	3974	16.38	3.47	-1.0	18.7	0.6	19.6	0.8
10/7/2014 12:12	3975	15.94	3.81	-1.0	22.9	0.4	23.6	0.8
10/7/2014 12:13	3976	16.35	3.52	-1.0	32.6	0.0	32.9	0.8
10/7/2014 12:14	3977	16.25	3.38	-1.0	27.4	1.1	28.8	1.0
10/7/2014 12:15	3978	16.20	3.53	-0.9	19.4	0.3	19.9	0.9
10/7/2014 12:16	3979	16.33	3.51	-1.0	17.4	0.6	18.2	0.9
10/7/2014 12:17	3980	16.39	3.51	-0.9	17.9	0.1	18.2	0.8
10/7/2014 12:18	3981	16.87	3.16	-1.0	18.6	0.4	19.2	0.8
10/7/2014 12:19	3982	16.40	3.53	-0.9	18.8	0.4	19.4	0.8
10/7/2014 12:20	3983	16.48	3.50	-1.0	18.9	0.1	19.2	0.8
10/7/2014 12:21	3984	16.88	3.27	-1.0	19.9	0.3	20.5	0.7
10/7/2014 12:22	3985	16.73	3.29	-1.0	20.6	0.4	21.3	0.8
10/7/2014 12:23	3986	16.73	3.22	-0.9	24.3	0.6	25.2	0.7
10/7/2014 12:24	3987	15.14	4.21	-0.9	26.8	-1.0	25.9	0.8
10/7/2014 12:25	3988	15.34	4.19	-0.9	23.9	0.1	24.2	0.8
10/7/2014 12:26	3989	15.44	4.17	-0.9	26.7	0.4	27.3	1.1
10/7/2014 12:27	3990	15.21	4.32	-0.9	23.2	1.1	24.6	1.0
10/7/2014 12:28	3991	15.85	4.00	-0.9	19.5	-0.1	19.7	0.8
10/7/2014 12:29	3992	15.88	4.14	-0.9	36.9	-0.3	37.4	1.0
10/7/2014 12:30	3993	15.82	4.25	-0.8	58.4	1.3	60.0	1.2
10/7/2014 12:31	3994	15.52	4.43	-0.9	57.0	1.3	58.6	1.0
10/7/2014 12:32	3995	15.45	4.50	-0.8	77.9	2.5	80.8	1.0
10/7/2014 12:33	3996	15.39	4.46	-0.9	88.0	2.1	90.2	1.0
10/7/2014 12:34	3997	15.24	4.42	-0.8	88.7	1.2	90.0	0.9
10/7/2014 12:35	3998	15.32	4.33	-0.7	81.4	4.0	85.6	1.0
10/7/2014 12:36	3999	15.01	4.68	-0.8	82.9	0.3	83.5	1.0
10/7/2014 12:37	4000	15.08	4.63	-0.8	70.9	2.1	73.1	1.1
10/7/2014 12:38	4001	15.47	4.41	-0.8	66.2	2.1	68.3	1.5
10/7/2014 12:39	4002	15.56	4.28	-0.8	47.1	1.9	49.1	1.3
10/7/2014 12:40	4003	15.41	4.38	-0.8	46.1	3.1	49.4	1.3

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Timestamp	Record Number	O2 (%)	CO2 (%)	SO2 (ppm)	NO (ppm)	NO2 (ppm)	NOx (ppm)	CO (ppm)
10/7/2014 12:41	4004	14.86	4.75	-0.8	38.2	3.0	41.3	1.3
10/7/2014 12:42	4005	15.44	4.40	-0.8	53.9	2.4	56.3	1.3
10/7/2014 12:43	4006	15.61	4.13	-0.7	46.6	0.9	47.9	1.1
10/7/2014 12:44	4007	14.92	4.55	-0.8	32.7	2.6	35.8	2.0
10/7/2014 12:45	4008	15.78	4.07	-0.8	67.8	-1.6	66.8	1.2
10/7/2014 12:46	4009	15.34	4.50	-0.7	72.2	0.6	73.0	1.3
10/7/2014 12:47	4010	15.55	4.35	-0.7	69.9	1.1	71.1	1.4
10/7/2014 12:48	4011	15.27	4.47	-0.7	66.3	0.3	66.8	1.4
10/7/2014 12:49	4012	15.22	4.51	-0.8	56.6	0.9	57.7	1.6
10/7/2014 12:50	4013	15.37	4.41	-0.7	46.9	1.3	48.2	1.6
10/7/2014 12:51	4014	15.53	4.31	-0.7	35.1	1.8	37.1	1.7
10/7/2014 12:52	4015	15.62	4.25	-0.7	29.7	0.2	29.9	1.3
10/7/2014 12:53	4016	15.26	4.48	-0.7	23.9	0.6	24.8	NAN
10/7/2014 12:54	4017	15.61	4.05	-0.6	57.8	9.8	68.9	NAN
10/7/2014 12:55	4018	15.75	4.12	-0.7	79.9	-0.7	79.2	1.4
10/7/2014 12:56	4019	15.12	4.56	-0.6	97.7	-1.0	96.9	1.5
10/7/2014 12:57	4020	14.72	4.86	-0.7	94.8	3.5	98.3	1.7
10/7/2014 12:58	4021	14.64	4.92	-0.7	101.5	2.6	104.2	1.6
10/7/2014 12:59	4022	14.72	4.90	-0.7	104.0	1.0	105.0	1.6
10/7/2014 13:00	4023	14.92	4.74	-0.7	96.0	6.2	102.2	1.5
10/7/2014 13:01	4024	15.11	4.59	-0.7	86.8	2.5	89.4	1.5
10/7/2014 13:02	4025	14.11	5.36	-0.7	62.6	8.7	71.6	1.6
10/7/2014 13:03	4026	14.81	4.92	-0.7	89.5	0.5	90.7	1.2
10/7/2014 13:04	4027	14.99	4.73	-0.7	102.6	1.6	104.4	1.0
10/7/2014 13:05	4028	15.07	4.82	-0.8	90.7	-1.3	89.0	0.9
10/7/2014 13:06	4029	15.20	4.79	-0.7	85.4	-0.4	83.1	0.9
10/7/2014 13:07	4030	15.35	4.64	-0.7	81.7	0.1	81.9	0.9
10/7/2014 13:08	4031	15.48	4.52	-0.7	85.1	0.2	85.5	0.8
10/7/2014 13:09	4032	15.26	4.67	-0.7	78.3	-0.4	78.0	0.8
10/7/2014 13:10	4033	15.29	4.64	-0.7	74.5	-0.1	74.5	0.8
10/7/2014 13:11	4034	15.29	4.64	-0.8	64.6	1.4	66.3	0.7
10/7/2014 13:12	4035	15.30	4.60	-0.7	61.8	1.9	63.9	0.7
10/7/2014 13:13	4036	14.39	4.97	-0.7	68.2	0.0	68.4	0.7
10/7/2014 13:14	4037	15.71	4.03	-0.7	85.7	5.0	90.1	0.8
10/7/2014 13:15	4038	15.56	4.26	-0.7	55.8	1.5	57.5	0.8
10/7/2014 13:16	4039	15.40	4.42	-0.7	45.5	0.9	46.6	0.9
10/7/2014 13:17	4040	16.16	3.88	-0.8	55.7	1.8	58.0	0.9
10/7/2014 13:18	4041	15.69	4.21	-0.8	44.4	0.2	44.7	1.0
10/7/2014 13:19	4042	15.15	4.65	-0.7	33.3	0.3	33.9	3.9
10/7/2014 13:20	4043	16.15	3.97	-0.7	59.8	1.4	61.4	1.2
10/7/2014 13:21	4044	15.49	4.38	-0.7	63.6	1.7	65.6	1.0
10/7/2014 13:22	4045	15.54	4.28	-0.7	63.2	2.1	65.5	1.4
10/7/2014 13:23	4046	15.80	3.99	-0.8	60.1	1.7	61.9	1.3

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Timestamp	Record Number	O2 (%)	CO2 (%)	SO2 (ppm)	NO (ppm)	NO2 (ppm)	NOx (ppm)	CO (ppm)
10/7/2014 13:24	4047	15.88	3.92	-0.8	56.7	1.0	58.0	1.0
10/7/2014 13:25	4048	15.60	4.23	-0.7	53.5	3.0	56.7	1.0
10/7/2014 13:26	4049	11.85	7.07	1.3	49.0	1.6	50.9	3.2
10/7/2014 13:27	4050	9.97	10.00	-0.7	3.9	5.3	9.4	0.4
10/7/2014 13:28	4051	9.96	10.00	-0.8	0.1	0.1	0.2	0.2
10/7/2014 13:29	4052	9.96	10.02	-0.8	0.0	0.0	0.1	0.2
10/7/2014 13:30	4053	9.94	9.95	5.1	0.0	0.0	0.1	0.4
10/7/2014 13:31	4054	0.56	0.50	85.4	28.0	4.7	32.2	62.3
10/7/2014 13:32	4055	0.06	0.07	88.4	89.2	-0.5	88.8	93.4
10/7/2014 13:33	4056	0.05	-0.06	88.7	89.4	-0.3	89.2	93.5
10/7/2014 13:34	4057	0.04	0.00	83.3	89.5	-0.2	89.3	93.2
10/7/2014 13:35	4058	0.04	0.11	45.6	76.0	-3.7	69.7	60.8
10/7/2014 13:36	4059	0.03	0.13	47.6	47.9	0.0	48.1	49.4
10/7/2014 13:37	4060	0.03	0.11	47.5	47.9	0.0	48.1	49.5
10/7/2014 13:38	4061	3.10	0.07	46.3	47.9	0.0	48.1	47.6
10/7/2014 13:39	4062	20.79	0.16	4.3	19.3	5.7	25.2	7.1
10/7/2014 13:40	4063	20.85	0.11	1.0	0.1	0.0	0.2	0.8
10/7/2014 13:41	4064	20.86	0.09	0.3	0.1	0.0	0.1	0.8
10/7/2014 13:42	4065	20.85	0.05	-0.1	0.1	0.0	0.1	0.8
10/7/2014 13:43	4066	20.87	0.05	-0.3	0.0	0.0	0.1	0.8
10/7/2014 13:44	4067	20.87	0.13	-0.4	0.0	0.0	0.1	0.8
10/7/2014 13:45	4068	20.88	0.17	-0.5	0.0	0.0	0.0	0.8
10/7/2014 13:46	4069	20.88	0.14	-0.6	0.0	0.0	0.0	0.8
10/7/2014 13:47	4070	20.88	0.11	-0.6	0.0	0.0	0.0	0.8
10/7/2014 13:48	4071	20.88	0.05	-0.6	0.0	0.0	0.0	0.8
10/7/2014 13:49	4072	20.88	0.07	-0.7	0.0	0.0	0.0	0.8
10/7/2014 13:50	4073	20.91	0.02	-0.7	0.0	0.0	0.0	0.8
10/7/2014 13:51	4074	20.91	-0.10	-0.8	0.0	0.0	0.0	0.8
10/7/2014 13:52	4075	20.89	-0.16	-0.8	0.0	0.0	0.0	0.8
10/7/2014 13:53	4076	20.90	-0.06	-0.8	0.0	0.0	0.0	0.8
10/7/2014 13:54	4077	20.90	0.02	-0.8	0.0	0.0	0.0	0.8
10/7/2014 13:55	4078	20.89	0.05	-0.8	-0.1	0.0	0.0	0.8
10/7/2014 13:56	4079	20.88	0.08	-0.8	-0.1	0.0	0.0	0.8
10/7/2014 13:57	4080	20.91	0.02	-0.9	0.0	0.0	0.0	0.8
10/7/2014 13:58	4081	20.90	0.02	-0.9	0.0	0.0	0.0	0.8
10/7/2014 13:59	4082	20.89	0.06	-0.9	0.0	0.0	0.0	0.8
10/7/2014 14:00	4083	20.88	0.01	-0.8	0.0	0.0	0.0	0.8
10/7/2014 14:01	4084	20.88	-0.11	-0.9	0.0	0.0	0.0	0.8
10/7/2014 14:02	4085	20.88	-0.04	-0.9	0.0	0.0	0.0	0.8
10/7/2014 14:03	4086	20.88	0.09	-0.9	0.0	0.0	0.0	0.8
10/7/2014 14:04	4087	20.88	0.06	-0.9	0.0	0.0	0.0	0.8
10/7/2014 14:05	4088	20.88	0.05	-0.9	0.0	0.0	0.0	0.8
10/7/2014 14:06	4089	20.89	0.01	-0.9	-0.1	0.0	0.0	0.8

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Timestamp	Record Number	O2 (%)	CO2 (%)	SO2 (ppm)	NO (ppm)	NO2 (ppm)	NOx (ppm)	CO (ppm)
10/7/2014 14:07	4090	20.91	-0.03	-0.9	0.0	0.0	0.0	0.7
10/7/2014 14:08	4091	20.91	-0.04	-0.9	0.0	0.0	0.0	0.7
10/7/2014 14:09	4092	20.91	-0.07	-0.9	0.0	0.0	0.0	0.7
10/7/2014 14:10	4093	20.91	-0.20	-0.9	0.0	0.0	0.0	0.8
10/7/2014 14:11	4094	20.91	-0.18	-0.9	0.0	0.0	0.0	0.7
10/7/2014 14:12	4095	20.86	0.04	-0.9	0.0	0.0	0.0	0.8
10/7/2014 14:13	4096	17.73	2.40	-1.0	7.5	0.7	8.3	0.6
10/7/2014 14:14	4097	17.70	2.39	-1.0	20.6	0.1	20.9	0.7
10/7/2014 14:15	4098	17.71	2.37	-0.9	21.0	0.4	21.7	0.6
10/7/2014 14:16	4099	18.00	2.17	-0.9	22.0	0.0	22.2	0.7
10/7/2014 14:17	4100	17.76	2.31	-0.9	22.5	-0.1	22.6	0.6
10/7/2014 14:18	4101	18.45	1.78	-0.9	23.4	-0.4	23.3	0.6
10/7/2014 14:19	4102	20.89	-0.13	-1.0	8.7	-1.1	7.7	0.8
10/7/2014 14:20	4103	18.97	1.34	-0.9	0.9	0.8	1.8	0.7
10/7/2014 14:21	4104	17.20	2.77	-0.9	26.3	-1.5	25.0	0.6
10/7/2014 14:22	4105	17.22	2.80	-0.8	27.7	0.6	28.5	0.6
10/7/2014 14:23	4106	17.23	2.78	-0.9	28.5	0.2	28.8	0.6
10/7/2014 14:24	4107	17.43	2.66	-0.9	28.6	0.1	28.8	0.6
10/7/2014 14:25	4108	17.44	2.60	-0.8	28.9	0.3	29.4	0.6
10/7/2014 14:26	4109	17.16	2.83	-0.9	28.5	-0.2	28.4	0.6
10/7/2014 14:27	4110	17.18	2.79	-0.8	27.7	0.7	28.6	0.6
10/7/2014 14:28	4111	16.57	3.25	-0.8	26.6	0.8	27.7	0.7
10/7/2014 14:29	4112	16.69	3.23	-0.9	19.4	0.7	20.3	0.6
10/7/2014 14:30	4113	16.43	3.47	-0.8	18.4	-0.1	18.5	0.6
10/7/2014 14:31	4114	16.57	3.37	-0.8	17.0	0.1	17.3	0.7
10/7/2014 14:32	4115	16.90	3.18	-0.8	18.6	-0.2	18.6	0.7
10/7/2014 14:33	4116	16.15	3.74	-0.8	21.2	-0.4	21.0	0.8
10/7/2014 14:34	4117	16.41	3.57	-0.8	32.5	-0.6	32.1	0.7
10/7/2014 14:35	4118	16.24	3.64	-0.8	27.1	0.9	28.2	0.8
10/7/2014 14:36	4119	16.50	3.44	-0.8	21.8	-0.2	21.8	2.3
10/7/2014 14:37	4120	16.70	3.10	-0.8	20.3	0.3	20.8	5.5
10/7/2014 14:38	4121	16.42	3.29	-0.8	18.4	0.4	19.0	5.6
10/7/2014 14:39	4122	16.84	3.17	-0.8	20.6	-0.6	20.2	4.4
10/7/2014 14:40	4123	16.71	3.20	-0.8	20.3	0.8	21.4	4.6
10/7/2014 14:41	4124	16.69	3.24	-0.8	18.4	0.5	19.2	4.2
10/7/2014 14:42	4125	17.19	2.90	-0.8	20.9	-0.1	21.1	3.1
10/7/2014 14:43	4126	17.03	2.93	-0.9	20.7	0.8	21.7	2.4
10/7/2014 14:44	4127	16.85	3.10	-0.9	20.7	0.0	20.9	1.7
10/7/2014 14:45	4128	16.45	3.55	-0.9	25.2	0.0	25.4	1.4
10/7/2014 14:46	4129	16.22	3.55	-0.8	28.5	-0.5	28.2	1.3
10/7/2014 14:47	4130	16.05	3.62	-0.9	30.9	-0.2	30.9	1.0
10/7/2014 14:48	4131	16.61	3.34	-0.9	27.5	0.6	28.2	0.9
10/7/2014 14:49	4132	16.24	3.59	-0.9	23.6	-0.4	23.4	0.9

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Timestamp	Record Number	O2 (%)	CO2 (%)	SO2 (ppm)	NO (ppm)	NO2 (ppm)	NOx (ppm)	CO (ppm)
10/7/2014 14:50	4133	15.86	3.93	-0.8	18.3	0.7	19.2	0.9
10/7/2014 14:51	4134	16.15	3.84	-0.9	37.6	-2.4	35.3	0.8
10/7/2014 14:52	4135	16.18	3.85	-0.9	46.3	0.4	46.9	0.8
10/7/2014 14:53	4136	16.01	3.89	-0.9	36.7	0.6	37.6	0.8
10/7/2014 14:54	4137	16.25	3.68	-0.9	25.7	1.1	27.0	0.8
10/7/2014 14:55	4138	16.72	3.37	-0.8	18.3	1.3	19.9	0.8
10/7/2014 14:56	4139	16.62	3.22	-0.9	17.4	0.6	18.3	0.9
10/7/2014 14:57	4140	16.68	3.17	-0.9	17.7	0.1	18.1	0.8
10/7/2014 14:58	4141	16.74	3.24	-0.9	18.4	0.2	18.9	0.8
10/7/2014 14:59	4142	17.24	2.97	-0.9	19.8	0.4	20.4	0.7
10/7/2014 15:00	4143	17.06	3.02	-0.9	20.1	0.5	20.9	0.8
10/7/2014 15:01	4144	17.00	3.08	-0.9	21.1	0.4	21.7	0.7
10/7/2014 15:02	4145	17.14	3.06	-0.8	22.8	0.4	23.4	0.7
10/7/2014 15:03	4146	17.21	3.07	-0.8	26.5	-0.3	26.3	0.7
10/7/2014 15:04	4147	16.33	3.76	-0.8	19.5	0.6	20.3	0.7
10/7/2014 15:05	4148	16.27	3.82	-0.8	15.1	0.0	15.2	0.7
10/7/2014 15:06	4149	16.73	3.42	-0.8	15.9	0.3	16.4	0.8
10/7/2014 15:07	4150	15.26	4.38	-0.8	22.2	0.5	22.9	38.3
10/7/2014 15:08	4151	16.32	3.72	-0.8	53.9	1.3	55.5	0.8
10/7/2014 15:09	4152	15.69	4.25	-0.8	65.5	1.3	67.0	0.8
10/7/2014 15:10	4153	15.82	4.18	-0.8	61.9	1.6	63.7	0.8
10/7/2014 15:11	4154	15.90	4.09	-0.8	58.1	-0.4	57.8	1.0
10/7/2014 15:12	4155	15.55	4.31	-0.8	52.9	-0.4	52.7	1.0
10/7/2014 15:13	4156	15.54	4.31	-0.8	47.2	0.9	48.3	0.9
10/7/2014 15:14	4157	15.79	4.12	-0.8	35.5	1.4	37.2	1.3
10/7/2014 15:15	4158	15.83	4.10	-0.7	34.8	-1.1	33.8	1.0
10/7/2014 15:16	4159	16.18	3.87	-0.8	30.3	0.1	30.7	1.0
10/7/2014 15:17	4160	16.35	3.55	-0.8	27.4	1.2	28.9	0.9
10/7/2014 15:18	4161	16.14	3.66	-0.8	25.8	-0.3	25.6	0.9
10/7/2014 15:19	4162	16.13	3.78	-0.8	22.4	1.5	24.1	0.9
10/7/2014 15:20	4163	15.74	4.34	-0.7	28.4	-0.8	27.8	0.8
10/7/2014 15:21	4164	16.15	3.97	-0.7	62.9	0.1	63.1	1.0
10/7/2014 15:22	4165	15.87	4.23	-0.7	64.3	0.4	64.9	1.2
10/7/2014 15:23	4166	15.40	4.60	-0.7	72.2	4.0	76.5	1.1
10/7/2014 15:24	4167	15.56	4.45	-0.7	80.6	0.9	81.6	1.1
10/7/2014 15:25	4168	15.62	4.37	-0.7	81.2	0.7	82.0	1.1
10/7/2014 15:26	4169	15.58	4.38	-0.7	81.1	0.6	81.8	1.0
10/7/2014 15:27	4170	15.75	4.21	-0.6	75.1	2.0	77.3	0.9
10/7/2014 15:28	4171	15.90	3.97	-0.7	66.6	1.9	68.7	0.8
10/7/2014 15:29	4172	16.19	3.71	-0.7	57.9	2.1	60.3	0.8
10/7/2014 15:30	4173	16.22	3.79	-0.7	50.9	-0.2	50.9	0.8
10/7/2014 15:31	4174	16.11	3.95	-0.6	45.7	0.1	46.1	0.7
10/7/2014 15:32	4175	15.84	4.05	-0.6	63.9	-1.7	62.3	0.8

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Timestamp	Record Number	O2 (%)	CO2 (%)	SO2 (ppm)	NO (ppm)	NO2 (ppm)	NOx (ppm)	CO (ppm)
10/7/2014 15:33	4176	16.30	3.77	-0.6	57.2	2.9	60.3	0.9
10/7/2014 15:34	4177	16.50	3.58	-0.7	50.6	0.6	51.5	1.0
10/7/2014 15:35	4178	16.04	3.92	-0.6	44.8	0.1	45.1	1.4
10/7/2014 15:36	4179	16.20	3.77	-0.6	31.9	-0.5	31.6	2.1
10/7/2014 15:37	4180	16.23	3.76	-0.6	28.8	0.8	29.8	1.4
10/7/2014 15:38	4181	16.44	3.61	-0.6	29.3	0.9	30.3	1.2
10/7/2014 15:39	4182	16.64	3.31	-0.6	29.4	-0.3	29.2	1.0
10/7/2014 15:40	4183	16.20	3.62	-0.7	29.1	-0.7	28.6	0.9
10/7/2014 15:41	4184	16.14	3.79	-0.6	34.0	-2.0	32.2	0.9
10/7/2014 15:42	4185	16.31	3.72	-0.6	28.8	0.5	29.5	0.9
10/7/2014 15:43	4186	16.48	3.65	-0.6	24.9	0.9	26.1	0.8
10/7/2014 15:44	4187	16.66	3.48	-0.6	23.4	0.4	24.0	0.8
10/7/2014 15:45	4188	16.21	3.80	-0.6	21.6	0.4	22.3	0.8
10/7/2014 15:46	4189	16.24	3.80	-0.6	20.6	0.1	20.9	0.7
10/7/2014 15:47	4190	16.55	3.63	-0.7	22.1	-0.3	22.0	0.7
10/7/2014 15:48	4191	16.47	3.61	-0.6	20.8	0.2	21.2	0.7
10/7/2014 15:49	4192	16.30	3.69	-0.6	19.8	0.6	20.6	0.7
10/7/2014 15:50	4193	16.50	3.45	-0.6	19.9	0.3	20.4	0.6
10/7/2014 15:51	4194	16.74	3.23	-0.7	19.8	-0.1	19.9	0.7
10/7/2014 15:52	4195	16.40	3.61	-0.6	18.9	0.3	19.5	0.7
10/7/2014 15:53	4196	16.65	3.52	-0.6	18.8	0.2	19.3	0.7
10/7/2014 15:54	4197	16.65	3.50	-0.6	18.7	0.4	19.4	0.7
10/7/2014 15:55	4198	14.60	5.26	-0.5	26.6	-1.0	25.9	NAN
10/7/2014 15:56	4199	15.08	4.85	-0.6	47.5	9.0	56.7	5.3
10/7/2014 15:57	4200	15.23	4.70	-0.5	41.4	15.2	56.8	13.6
10/7/2014 15:58	4201	15.91	4.19	-0.6	58.2	3.8	62.2	7.4
10/7/2014 15:59	4202	16.25	3.92	-0.5	62.0	1.8	64.1	4.9
10/7/2014 16:00	4203	15.75	4.14	-0.6	56.8	0.9	57.9	4.5
10/7/2014 16:01	4204	15.97	3.88	-0.6	57.6	-0.7	56.9	3.3
10/7/2014 16:02	4205	16.37	3.66	-0.5	50.9	2.0	53.2	2.6
10/7/2014 16:03	4206	16.15	3.85	-0.6	45.1	0.7	46.0	2.6
10/7/2014 16:04	4207	15.99	4.00	-0.6	38.8	-0.5	38.4	2.6
10/7/2014 16:05	4208	16.12	3.91	-0.6	31.3	1.2	32.7	2.1
10/7/2014 16:06	4209	16.18	3.85	-0.6	24.8	-0.2	24.8	1.6
10/7/2014 16:07	4210	16.47	3.70	-0.6	18.8	0.7	19.7	1.5
10/7/2014 16:08	4211	16.50	3.61	-0.6	19.9	0.5	20.6	1.5
10/7/2014 16:09	4212	16.22	3.82	-0.6	20.0	-0.1	20.2	1.4
10/7/2014 16:10	4213	16.29	3.67	-0.6	17.7	0.6	18.5	1.1
10/7/2014 16:11	4214	16.42	3.49	-0.5	16.6	0.3	17.1	1.0
10/7/2014 16:12	4215	16.67	3.36	-0.6	17.0	0.3	17.5	1.0
10/7/2014 16:13	4216	16.51	3.53	-0.6	23.4	0.2	23.8	1.0
10/7/2014 16:14	4217	16.18	3.80	-0.6	19.2	0.8	20.3	0.9
10/7/2014 16:15	4218	16.61	3.51	-0.6	23.5	1.0	24.8	0.8

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Timestamp	Record Number	O2 (%)	CO2 (%)	SO2 (ppm)	NO (ppm)	NO2 (ppm)	NOx (ppm)	CO (ppm)
10/7/2014 16:16	4219	16.22	3.73	-0.6	25.5	0.8	26.5	0.8
10/7/2014 16:17	4220	16.20	3.73	-0.6	24.6	1.0	25.8	0.8
10/7/2014 16:18	4221	16.24	3.64	-0.6	30.9	0.4	31.5	1.0
10/7/2014 16:19	4222	16.21	3.68	-0.5	35.3	1.2	36.8	1.0
10/7/2014 16:20	4223	16.05	3.81	-0.5	41.2	-0.2	41.2	1.0
10/7/2014 16:21	4224	15.95	3.83	-0.5	63.7	0.1	64.0	4.4
10/7/2014 16:22	4225	16.02	3.68	-0.5	72.1	1.6	73.9	6.5
10/7/2014 16:23	4226	16.05	3.59	-0.5	74.7	1.2	76.2	6.6
10/7/2014 16:24	4227	15.71	3.79	-0.5	70.3	1.0	71.5	5.4
10/7/2014 16:25	4228	16.13	3.54	-0.4	68.2	0.0	68.4	5.0
10/7/2014 16:26	4229	15.71	3.84	-0.5	67.2	2.2	69.6	4.3
10/7/2014 16:27	4230	15.61	4.00	-0.4	64.1	2.5	66.8	2.7
10/7/2014 16:28	4231	15.74	4.03	-0.1	63.3	1.8	65.3	2.3
10/7/2014 16:29	4232	11.21	7.43	2.3	58.0	6.8	65.0	4.5
10/7/2014 16:30	4233	9.98	9.86	-0.3	2.6	6.5	9.2	0.3
10/7/2014 16:31	4234	9.97	9.87	-0.3	0.1	0.1	0.2	0.3
10/7/2014 16:32	4235	7.80	7.50	27.3	0.0	0.0	0.1	5.7
10/7/2014 16:33	4236	0.09	0.08	87.6	58.2	-3.2	47.4	83.6
10/7/2014 16:34	4237	0.07	-0.03	88.9	91.4	-0.4	91.0	94.6
10/7/2014 16:35	4238	0.07	-0.06	62.8	90.4	0.9	91.3	83.9
10/7/2014 16:36	4239	0.06	-0.07	47.9	53.2	3.4	56.7	50.5
10/7/2014 16:37	4240	0.05	-0.07	48.0	49.0	0.0	49.1	50.1
10/7/2014 16:38	4241	0.04	-0.07	48.0	48.9	0.0	49.1	50.0
10/7/2014 16:39	4242	8.14	2.30	29.9	49.4	-0.3	49.2	35.2
10/7/2014 16:40	4243	15.74	3.69	1.9	59.6	-1.8	57.9	2.8
10/7/2014 16:41	4244	15.39	3.88	0.7	57.3	0.9	58.4	2.4
10/7/2014 16:42	4245	15.49	3.83	0.4	53.1	0.8	54.0	2.1
10/7/2014 16:43	4246	15.63	3.74	0.2	49.0	0.7	49.9	1.9
10/7/2014 16:44	4247	15.97	3.61	0.2	47.3	1.3	48.9	1.9
10/7/2014 16:45	4248	16.08	3.57	0.1	43.1	1.0	44.3	1.9
10/7/2014 16:46	4249	15.87	3.77	0.1	38.9	-0.3	38.8	2.0
10/7/2014 16:47	4250	15.92	3.75	0.0	37.1	0.2	37.5	1.6
10/7/2014 16:48	4251	16.06	3.66	0.0	31.5	-0.4	31.3	1.6
10/7/2014 16:49	4252	16.56	3.35	-0.1	26.4	1.3	28.0	1.6
10/7/2014 16:50	4253	16.63	3.22	-0.1	21.8	1.1	23.1	1.6
10/7/2014 16:51	4254	16.34	3.45	0.0	17.9	0.8	18.9	1.5
10/7/2014 16:52	4255	16.34	3.46	0.0	15.1	0.9	16.2	1.3
10/7/2014 16:53	4256	16.71	3.24	-0.1	15.1	0.6	15.9	1.3
10/7/2014 16:54	4257	16.69	3.16	-0.1	14.8	0.5	15.5	1.3
10/7/2014 16:55	4258	16.42	3.27	-0.1	14.4	0.0	14.6	1.2
10/7/2014 16:56	4259	16.51	3.14	-0.1	14.4	0.7	15.3	1.0
10/7/2014 16:57	4260	16.99	2.85	-0.2	15.0	0.7	15.9	1.1
10/7/2014 16:58	4261	16.61	3.16	-0.1	14.9	0.6	15.8	1.1

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Timestamp	Record Number	O2 (%)	CO2 (%)	SO2 (ppm)	NO (ppm)	NO2 (ppm)	NOx (ppm)	CO (ppm)
10/7/2014 16:59	4262	16.57	3.27	-0.2	15.2	0.3	15.7	0.9
10/7/2014 17:00	4263	16.75	3.19	-0.2	16.6	0.1	16.9	0.9
10/7/2014 17:01	4264	17.07	2.91	-0.2	17.5	-0.1	17.6	1.0
10/7/2014 17:02	4265	16.71	3.17	-0.2	17.8	0.1	18.0	1.1
10/7/2014 17:03	4266	16.73	3.16	-0.2	18.3	0.5	19.0	0.9
10/7/2014 17:04	4267	17.27	2.80	-0.3	19.5	0.5	20.3	0.8
10/7/2014 17:05	4268	16.90	2.99	-0.2	19.4	0.6	20.3	1.0
10/7/2014 17:06	4269	16.88	2.99	-0.3	19.5	0.3	19.9	0.9
10/7/2014 17:07	4270	17.16	2.68	-0.3	20.7	-0.1	20.8	0.8
10/7/2014 17:08	4271	17.21	2.54	-0.3	21.3	0.5	22.0	0.8
10/7/2014 17:09	4272	17.03	2.80	-0.3	20.5	0.5	21.2	0.9
10/7/2014 17:10	4273	17.18	2.80	-0.3	21.3	0.2	21.7	0.8
10/7/2014 17:11	4274	17.39	2.59	-0.3	22.1	-0.1	22.2	0.9
10/7/2014 17:12	4275	17.11	2.83	-0.3	21.6	0.4	22.2	0.9
10/7/2014 17:13	4276	17.22	2.77	-0.4	21.5	0.7	22.4	0.8
10/7/2014 17:14	4277	17.52	2.49	-0.3	22.7	-0.2	22.7	0.9
10/7/2014 17:15	4278	17.17	2.77	-0.3	22.4	0.1	22.7	0.9
10/7/2014 17:16	4279	17.22	2.73	-0.3	21.8	0.7	22.8	0.9
10/7/2014 17:17	4280	17.66	2.27	-0.3	22.8	0.1	23.2	0.9
10/7/2014 17:18	4281	17.06	2.69	-0.3	22.7	0.0	22.9	0.8
10/7/2014 17:19	4282	16.61	3.35	-0.4	24.0	0.8	25.1	0.9
10/7/2014 17:20	4283	16.48	3.50	-0.3	30.9	0.3	31.4	1.1
10/7/2014 17:21	4284	16.34	3.65	-0.3	31.6	-0.4	31.5	1.0
10/7/2014 17:22	4285	15.85	4.08	-0.3	51.9	-1.8	50.2	1.2
10/7/2014 17:23	4286	16.16	3.82	-0.3	74.8	1.6	76.6	1.3
10/7/2014 17:24	4287	16.14	3.81	-0.3	82.9	1.6	84.6	1.3
10/7/2014 17:25	4288	15.83	3.95	-0.3	82.3	2.6	85.1	1.2
10/7/2014 17:26	4289	15.78	3.95	-0.3	73.7	1.7	75.6	1.2
10/7/2014 17:27	4290	16.04	3.67	-0.3	68.8	0.8	69.8	1.3
10/7/2014 17:28	4291	16.15	3.47	-0.4	73.1	-1.1	72.1	1.5
10/7/2014 17:29	4292	15.86	3.80	-0.3	62.2	4.0	66.3	1.4
10/7/2014 17:30	4293	15.89	3.84	-0.3	50.1	3.8	54.1	1.4
10/7/2014 17:31	4294	15.94	3.81	-0.3	54.9	1.7	56.8	1.3
10/7/2014 17:32	4295	16.37	3.55	-0.4	51.0	2.7	54.0	1.3
10/7/2014 17:33	4296	16.29	3.52	-0.3	46.0	1.7	47.9	1.3
10/7/2014 17:34	4297	16.10	3.68	-0.3	41.5	-0.4	41.3	1.4
10/7/2014 17:35	4298	15.65	4.00	-0.3	31.6	1.1	32.9	1.8
10/7/2014 17:36	4299	15.87	3.75	-0.3	25.7	-1.0	24.9	1.7
10/7/2014 17:37	4300	16.59	3.20	-0.3	21.5	1.7	23.4	1.1
10/7/2014 17:38	4301	16.18	3.55	-0.4	24.5	0.3	25.1	1.2
10/7/2014 17:39	4302	15.63	3.99	-0.3	29.6	-3.0	26.8	6.3
10/7/2014 17:40	4303	16.54	3.35	-0.3	53.1	-1.3	52.0	1.2
10/7/2014 17:41	4304	16.13	3.59	-0.4	47.4	1.6	49.3	1.1

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Timestamp	Record Number	O2 (%)	CO2 (%)	SO2 (ppm)	NO (ppm)	NO2 (ppm)	NOx (ppm)	CO (ppm)
10/7/2014 17:42	4305	16.13	3.60	-0.4	39.0	1.5	40.8	1.4
10/7/2014 17:43	4306	16.24	3.55	-0.4	37.3	1.5	39.0	1.4
10/7/2014 17:44	4307	16.61	3.28	-0.4	33.1	1.4	34.6	1.3
10/7/2014 17:45	4308	16.09	3.50	-0.4	32.9	1.0	34.2	1.1
10/7/2014 17:46	4309	16.08	3.46	-0.4	31.0	2.0	33.2	1.1
10/7/2014 17:47	4310	16.26	3.50	-0.5	32.3	1.4	33.9	1.1
10/7/2014 17:48	4311	16.54	3.32	-0.5	33.6	-0.5	33.3	1.1
10/7/2014 17:49	4312	16.02	3.67	-0.5	34.9	-1.9	33.1	1.1
10/7/2014 17:50	4313	15.99	3.79	-0.5	33.0	1.1	34.4	1.1
10/7/2014 17:51	4314	16.37	3.57	-0.5	40.9	-1.2	39.9	0.9
10/7/2014 17:52	4315	15.90	3.88	-0.5	50.7	0.4	51.3	0.9
10/7/2014 17:53	4316	16.14	3.73	-0.5	44.5	1.8	46.5	0.8
10/7/2014 17:54	4317	16.12	3.52	-0.5	45.9	1.9	48.1	0.9
10/7/2014 17:55	4318	16.27	3.53	-0.5	51.6	2.1	53.9	0.8
10/7/2014 17:56	4319	16.06	3.77	-0.6	54.8	0.8	55.8	0.8
10/7/2014 17:57	4320	15.41	4.45	-0.5	50.9	-1.8	49.3	0.9
10/7/2014 17:58	4321	15.99	4.04	-0.6	54.3	2.4	57.0	1.4
10/7/2014 17:59	4322	16.14	4.03	-0.6	50.0	0.5	50.8	2.5
10/7/2014 18:00	4323	14.89	4.90	-0.5	60.4	2.1	62.7	2.5
10/7/2014 18:01	4324	15.64	4.31	-0.6	79.9	0.6	80.6	2.1
10/7/2014 18:02	4325	14.73	4.77	-0.5	91.1	2.4	93.7	2.5
10/7/2014 18:03	4326	14.58	4.78	-0.5	97.5	1.7	99.4	2.5
10/7/2014 18:04	4327	15.15	4.57	-0.6	103.1	1.4	104.6	2.0
10/7/2014 18:05	4328	14.76	4.76	-0.6	105.3	0.8	106.2	1.9
10/7/2014 18:06	4329	14.57	4.90	-0.5	88.4	4.9	93.4	2.4
10/7/2014 18:07	4330	14.65	4.84	-0.5	95.8	3.5	99.4	1.9
10/7/2014 18:08	4331	15.05	4.62	-0.5	97.1	4.6	101.9	1.5
10/7/2014 18:09	4332	15.12	4.50	-0.4	97.7	4.3	102.2	1.4
10/7/2014 18:10	4333	14.83	4.65	-0.5	96.9	4.5	101.6	1.6
10/7/2014 18:11	4334	14.94	4.46	-0.5	94.1	1.5	95.7	1.7
10/7/2014 18:12	4335	15.49	4.18	-0.5	93.2	2.1	95.3	1.5
10/7/2014 18:13	4336	15.11	4.48	-0.6	89.8	3.3	93.3	1.5
10/7/2014 18:14	4337	15.10	4.50	-0.6	73.7	4.0	77.9	1.5
10/7/2014 18:15	4338	15.34	4.38	-0.5	82.0	2.2	84.4	1.4
10/7/2014 18:16	4339	15.74	4.06	-0.5	81.0	3.1	84.2	1.2
10/7/2014 18:17	4340	15.33	4.34	-0.5	77.9	1.5	79.6	1.2
10/7/2014 18:18	4341	15.42	4.27	-0.5	75.8	2.1	78.1	1.3
10/7/2014 18:19	4342	15.95	3.80	-0.5	72.9	1.3	74.5	1.2
10/7/2014 18:20	4343	15.29	4.24	-0.5	71.8	1.1	73.1	1.2
10/7/2014 18:21	4344	11.70	7.04	2.5	79.2	11.1	90.5	3.7
10/7/2014 18:22	4345	9.96	9.97	-0.5	6.7	9.6	16.4	0.4
10/7/2014 18:23	4346	9.94	9.99	-0.6	0.1	0.1	0.3	0.2
10/7/2014 18:24	4347	9.94	9.99	-0.6	0.1	0.1	0.2	0.2

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Timestamp	Record Number	O2 (%)	CO2 (%)	SO2 (ppm)	NO (ppm)	NO2 (ppm)	NOx (ppm)	CO (ppm)
10/7/2014 18:25	4348	9.93	10.00	-0.7	0.0	0.0	0.1	0.2
10/7/2014 18:26	4349	9.91	9.93	5.1	0.0	0.0	0.1	0.4
10/7/2014 18:27	4350	0.58	0.39	85.6	27.7	4.9	32.2	62.2
10/7/2014 18:28	4351	0.06	-0.01	88.2	88.5	-0.5	88.1	92.9
10/7/2014 18:29	4352	0.04	0.11	88.7	88.7	-0.3	88.5	93.1
10/7/2014 18:30	4353	0.04	0.13	66.1	88.3	0.3	88.7	85.1
10/7/2014 18:31	4354	0.03	0.11	47.5	57.4	-2.1	55.4	50.3
10/7/2014 18:32	4355	0.03	0.10	47.5	47.6	0.0	47.8	49.3
10/7/2014 18:33	4356	6.40	2.11	34.7	48.4	-0.8	47.7	37.6
10/7/2014 18:34	4357	9.84	9.92	0.3	41.6	-4.1	35.8	3.6
10/7/2014 18:35	4358	9.93	9.89	-0.5	0.1	0.1	0.3	0.2
10/7/2014 18:36	4359	9.93	9.84	-0.7	0.0	0.0	0.2	0.2
10/7/2014 18:37	4360	9.98	9.87	-0.6	0.0	0.0	0.1	0.2
10/7/2014 18:38	4361	4.63	0.39	79.4	15.6	-0.8	13.2	45.4
10/7/2014 18:39	4362	0.02	0.11	90.6	87.1	1.5	88.7	93.0
10/7/2014 18:40	4363	0.01	0.10	90.7	89.5	-0.2	89.3	93.1
10/7/2014 18:41	4364	0.01	0.10	52.7	79.5	3.6	83.3	69.3
10/7/2014 18:42	4365	0.00	0.10	48.6	48.6	-0.5	48.3	49.2
10/7/2014 18:43	4366	0.00	-0.02	48.6	47.9	0.0	48.1	49.2
10/7/2014 18:44	4367	8.13	7.85	24.4	47.4	0.5	48.1	40.2
10/7/2014 18:45	4368	20.60	1.11	-0.5	12.5	-2.7	9.2	2.7
10/7/2014 18:46	4369	20.92	12.96	-0.9	0.0	0.0	0.1	0.2
10/7/2014 18:47	4370	21.11	20.60	-0.6	0.0	0.0	0.0	-0.2
10/7/2014 18:48	4371	21.12	20.60	-0.5	0.0	0.0	0.0	-0.2
10/7/2014 18:49	4372	9.24	8.41	71.7	5.5	2.0	5.0	NAN
10/7/2014 18:50	4373	0.05	0.15	99.7	160.7	-3.8	144.1	NAN
10/7/2014 18:51	4374	0.03	0.00	99.7	170.0	-0.3	169.8	NAN
10/7/2014 18:52	4375	0.02	-0.06	99.7	170.0	-0.1	170.1	NAN

Table 5
Continuous Emissions Measurements Result
Run 129-2
10/06/14

Time (1-min)	NOx (ppm)	NOx (ppm Cor.)	NOx (lb/hr)	CO (ppm)	CO (ppm Cor.)	CO (lb/hr)	SO2 (ppm)	SO2 (ppm Cor.)	SO2 (lb/hr)	O2 (%)	O2 (% Cor.)	CO2 (%)	CO2 (% Cor.)
818	33.8	33.3	0.29	2.7	2.5	0.01	0.6	0.3	0.00	14.80	14.97	4.72	4.71
819	33.0	32.5	0.28	1.8	1.6	0.01	0.6	0.3	0.00	14.76	14.93	4.72	4.70
820	36.9	36.4	0.32	1.1	0.9	0.00	0.6	0.2	0.00	15.18	15.36	4.46	4.44
821	39.1	38.5	0.34	1.4	1.2	0.01	0.6	0.2	0.00	13.81	13.96	5.33	5.33
822	32.1	31.6	0.28	1.3	1.1	0.01	0.5	0.2	0.00	13.70	13.85	5.39	5.38
823	31.1	30.6	0.27	1.3	1.0	0.01	0.6	0.2	0.00	13.80	13.95	5.35	5.35
824	31.7	31.2	0.27	1.6	1.3	0.01	0.5	0.1	0.00	13.92	14.08	5.27	5.27
825	20.4	20.0	0.26	2.5	2.4	0.01	0.5	0.1	0.00	14.34	14.59	4.86	4.85
826	29.0	28.5	0.25	1.7	1.5	0.01	0.5	0.2	0.00	14.09	14.25	4.90	4.89
827	28.7	28.2	0.25	1.3	1.1	0.01	0.4	0.1	0.00	14.01	14.17	5.03	5.02
828	27.7	27.3	0.24	1.2	1.0	0.01	0.4	0.0	0.00	14.08	14.24	5.06	5.05
829	28.9	28.5	0.25	1.2	0.9	0.01	0.4	0.0	0.00	14.40	14.56	4.87	4.86
830	30.2	29.7	0.26	1.1	0.9	0.00	0.4	0.1	0.00	15.37	15.55	4.23	4.21
831	33.0	32.6	0.28	1.2	0.9	0.00	0.5	0.1	0.00	15.05	15.22	4.41	4.40
832	31.1	30.7	0.27	1.1	0.9	0.00	0.4	0.1	0.00	14.95	15.12	4.44	4.42
833	31.8	31.3	0.27	1.0	0.8	0.00	0.4	0.1	0.00	15.04	15.21	4.38	4.36
834	30.9	30.4	0.27	0.9	0.7	0.00	0.4	0.0	0.00	15.98	16.17	3.80	3.77
835	31.6	31.1	0.27	1.1	0.9	0.00	0.4	0.0	0.00	15.02	15.19	4.50	4.49
836	51.2	50.5	0.44	1.2	1.0	0.01	0.4	0.1	0.00	15.35	15.53	4.09	4.07
837	36.6	36.1	0.32	2.0	1.7	0.01	0.3	0.0	0.00	14.88	15.05	4.42	4.40
838	41.1	40.5	0.35	1.3	1.1	0.01	0.4	0.1	0.00	15.36	15.54	4.25	4.23
839	46.2	45.5	0.40	1.4	1.2	0.01	0.4	0.1	0.00	14.90	15.07	4.56	4.55
840	45.3	44.6	0.39	21.1	21.4	0.11	0.4	0.0	0.00	13.64	13.79	5.53	5.53
841	97.8	96.6	0.84	3.7	3.5	0.02	0.4	0.0	0.00	14.98	15.15	4.54	4.53
842	49.1	48.4	0.42	1.5	1.3	0.01	0.3	0.0	0.00	14.04	14.20	5.19	5.18
843	76.3	75.4	0.66	1.2	1.0	0.01	0.4	0.1	0.00	14.95	15.12	4.60	4.59
844	42.9	42.3	0.37	1.3	1.1	0.01	0.4	0.0	0.00	14.75	14.92	4.69	4.67
845	45.1	44.5	0.39	1.5	1.3	0.01	0.3	-0.1	0.00	13.77	13.92	5.26	5.25
846	56.3	55.5	0.49	1.0	0.8	0.00	0.3	-0.1	0.00	13.97	14.13	5.00	4.99
847	40.2	39.6	0.35	1.2	1.0	0.01	0.3	-0.1	0.00	14.23	14.39	4.81	4.80
848	28.8	28.4	0.25	1.2	1.0	0.01	0.3	0.0	0.00	14.95	15.12	4.49	4.47
849	23.3	22.9	0.20	1.2	0.9	0.01	0.2	-0.2	0.00	15.94	16.13	3.73	3.71
850	32.6	32.1	0.28	1.0	0.7	0.00	0.2	-0.1	0.00	15.48	15.66	4.21	4.19
851	28.9	28.5	0.25	1.3	1.0	0.01	0.3	-0.1	0.00	15.27	15.45	4.38	4.36
852	40.3	39.7	0.35	3.2	3.1	0.02	0.2	-0.2	0.00	15.41	15.59	4.19	4.17
853	38.1	37.6	0.33	1.2	1.0	0.01	0.2	-0.1	0.00	15.08	15.25	4.40	4.38
854	35.8	35.3	0.31	1.1	0.9	0.00	0.2	-0.1	0.00	15.05	15.22	4.44	4.42
855	34.5	34.0	0.30	1.1	0.9	0.00	0.2	-0.2	0.00	15.62	15.80	4.06	4.03
856	24.8	24.4	0.21	1.7	1.5	0.01	0.2	-0.2	0.00	14.75	14.92	4.43	4.42
857	24.2	23.8	0.21	1.3	1.0	0.01	0.2	-0.2	0.00	14.60	14.77	4.55	4.54
858	28.5	28.1	0.25	1.1	0.9	0.00	0.2	-0.2	0.00	14.72	14.89	4.60	4.58
859	30.9	30.4	0.27	1.0	0.7	0.00	0.2	-0.1	0.00	14.92	15.09	4.51	4.49
900	33.9	33.4	0.29	0.9	0.7	0.00	0.2	-0.2	0.00	15.26	15.44	4.31	4.30
901	35.8	35.3	0.31	0.9	0.6	0.00	0.1	-0.2	0.00	15.84	16.03	3.85	3.83
902	37.6	37.0	0.32	1.0	0.7	0.00	0.2	-0.2	0.00	15.17	15.35	4.22	4.20
903	33.0	32.6	0.28	1.0	0.8	0.00	0.2	-0.2	0.00	15.23	15.41	4.18	4.16
904	33.8	33.3	0.29	0.9	0.7	0.00	0.1	-0.2	0.00	15.34	15.52	4.10	4.07
905	35.2	34.7	0.30	0.9	0.6	0.00	0.1	-0.2	0.00	15.62	15.80	3.85	3.83
906	35.4	34.9	0.30	0.8	0.6	0.00	0.2	-0.2	0.00	16.83	17.03	2.83	2.79
907	35.2	34.7	0.30	1.1	0.8	0.00	0.2	-0.2	0.00	15.18	15.36	4.17	4.15
908	38.4	37.9	0.33	1.3	1.0	0.01	0.2	-0.1	0.00	15.55	15.73	4.00	3.98
909	36.0	35.5	0.31	1.3	1.1	0.01	0.2	-0.1	0.00	15.41	15.59	4.13	4.11
910	34.3	33.8	0.30	1.5	1.3	0.01	0.2	-0.1	0.00	15.75	15.94	3.94	3.92
911	28.5	28.1	0.25	1.4	1.2	0.01	0.2	-0.2	0.00	15.63	15.81	3.97	3.95
912	26.9	26.5	0.23	1.3	1.1	0.01	0.2	-0.2	0.00	14.65	14.82	4.45	4.43
913	32.0	31.6	0.28	1.5	1.2	0.01	0.2	-0.2	0.00	15.03	15.20	4.25	4.23
914	25.9	25.5	0.22	1.1	0.9	0.00	0.1	-0.2	0.00	15.12	15.30	4.16	4.14
915	28.2	27.8	0.24	1.1	0.9	0.00	0.1	-0.2	0.00	14.38	14.54	4.52	4.50
916	27.9	27.5	0.24	1.2	0.9	0.00	0.1	-0.3	0.00	14.50	14.67	4.36	4.34
917	23.2	22.8	0.20	1.3	1.1	0.01	0.1	-0.2	0.00	14.62	14.79	4.44	4.43
918	25.4	25.0	0.22	1.4	1.2	0.01	0.1	-0.2	0.00	14.83	15.00	4.44	4.42
919	42.3	41.7	0.36	1.7	1.5	0.01	0.1	-0.3	0.00	14.32	14.48	4.72	4.70
920	33.9	33.5	0.29	2.7	2.6	0.01	0.0	-0.4	0.00	15.13	15.31	4.18	4.16
921	23.0	22.6	0.20	1.3	1.1	0.01	0.0	-0.3	0.00	14.89	15.06	4.30	4.28
922	20.8	20.5	0.18	1.1	0.9	0.00	0.1	-0.3	0.00	15.66	15.84	3.76	3.73
923	29.8	29.4	0.26	0.9	0.7	0.00	0.0	-0.3	0.00	15.95	16.14	3.69	3.67
924	26.3	25.9	0.23	0.9	0.7	0.00	0.0	-0.3	0.00	15.81	16.00	3.86	3.83
925	44.8	44.2	0.39	0.8	0.6	0.00	0.0	-0.3	0.00	15.82	16.01	3.74	3.71
926	40.8	40.3	0.35	1.3	1.1	0.01	0.0	-0.4	0.00	15.57	15.75	3.89	3.87
927	30.4	29.9	0.26	0.9	0.7	0.00	0.0	-0.3	0.00	16.25	16.44	3.37	3.34
928	26.6	26.2	0.23	0.9	0.7	0.00	0.0	-0.4	0.00	15.94	16.13	3.74	3.72
929	28.5	28.1	0.25	9.5	9.5	0.05	0.0	-0.4	0.00	14.91	15.08	4.45	4.44
930	44.1	43.5	0.38	6.6	6.6	0.03	0.0	-0.4	0.00	14.93	15.10	4.41	4.39
931	43.7	43.1	0.38	1.0	0.7	0.00	0.0	-0.1	0.00	15.21	15.39	4.21	4.19
932	28.8	28.4	0.25	1.1	0.9	0.00	0.0	-0.4	0.00	14.75	14.92	4.52	4.51
933	22.8	22.4	0.20	1.3	1.1	0.01	0.0	-0.3	0.00	16.06	16.25	3.57	3.54
934	30.9	30.4	0.27	0.8	0.6	0.00	0.0	-0.4	0.00	16.25	16.44	3.37	3.34
935	38.0	37.5	0.33	0.7	0.5	0.00	0.0	-0.4	0.00	16.18	16.37	3.35	3.31
936	43.1	42.5	0.37	0.9	0.7	0.00	0.0	-0.4	0.00	15.41	15.59	3.99	3.97
937	38.4	37.8	0.33	1.0	0.8	0.00	0.0	-0.4	0.00	15.18	15.36	4.15	4.13
938	38.3	37.8	0.33	1.0	0.7	0.00	0.0	-0.4	0.00	15.48	15.66	3.90	3.87
939	34.8	34.3	0.30	0.9	0.7	0.00	0.0	-0.4	0.00	16.09	16.28	3.58	3.56
940	32.8	32.4	0.28	1.0	0.8	0.00	0.0	-0.1	0.00	16.05	16.24	3.65	3.63
941	33.6	33.1	0.29	2.9	2.8	0.01	0.0	-0.4	0.00	15.35	15.53	4.23	4.21
942	44.8	44.4	0.39	3.0	2.8	0.01	0.0</						

Table 6
Continuous Emissions Measurements Result
Run I23-2
10/08/14

Time (1-min)	NOx (ppm)	NOx (ppm Cor.)	NOx (lb/hr)	CO (ppm)	CO (ppm Cor.)	CO (lb/hr)	SO2 (ppm)	SO2 (ppm Cor.)	SO2 (lb/hr)	O2 (%)	O2 (% Cor.)	CO2 (%)	CO2 (% Cor.)
1111	30.5	30.4	0.25	0.6	0.5	0.00	-0.4	-0.4	0.00	16.65	16.85	3.35	3.28
1112	32.9	32.8	0.27	0.6	0.5	0.00	-0.4	-0.4	0.00	16.11	16.30	3.74	3.67
1113	25.6	25.4	0.21	0.7	0.5	0.00	-0.4	-0.4	-0.01	16.28	16.47	3.50	3.42
1114	26.7	26.5	0.22	42.0	43.7	0.22	-0.4	-0.5	-0.01	15.23	15.41	4.39	4.33
1115	49.5	49.4	0.41	2.9	2.8	0.01	-0.3	-0.4	0.00	15.95	16.14	3.84	3.77
1116	54.9	54.8	0.45	1.2	1.1	0.01	-0.4	-0.4	0.00	15.53	15.71	4.02	3.95
1117	62.2	62.2	0.52	1.5	1.3	0.01	-0.4	-0.4	0.00	15.28	15.46	4.14	4.07
1118	68.5	68.5	0.57	1.4	1.2	0.01	-0.3	-0.4	0.00	14.94	15.11	4.50	4.44
1119	71.5	71.5	0.59	1.2	1.0	0.01	-0.3	-0.4	0.00	14.58	14.75	4.78	4.72
1120	75.9	75.9	0.63	1.0	0.9	0.00	-0.4	-0.4	-0.01	14.22	14.38	5.00	4.94
1121	74.7	74.6	0.62	1.0	0.9	0.00	-0.4	-0.4	-0.01	14.17	14.33	5.02	4.96
1122	70.0	70.0	0.58	1.0	0.8	0.00	-0.3	-0.4	0.00	13.87	14.02	5.20	5.13
1123	77.0	76.9	0.64	1.0	0.8	0.00	-0.4	-0.5	-0.01	13.78	13.93	5.26	5.20
1124	73.2	73.2	0.61	1.1	0.9	0.00	-0.4	-0.4	-0.01	13.81	13.96	5.22	5.16
1125	81.8	81.8	0.68	1.0	0.8	0.00	-0.4	-0.4	-0.01	13.77	13.92	5.11	5.04
1126	81.0	81.0	0.67	0.9	0.8	0.00	-0.3	-0.4	0.00	13.90	14.06	5.02	4.95
1127	78.0	77.9	0.65	0.9	0.8	0.00	-0.3	-0.4	0.00	14.07	14.23	5.06	4.99
1128	74.1	74.1	0.61	1.0	0.8	0.00	-0.3	-0.4	0.00	13.63	13.78	5.36	5.30
1129	73.4	73.3	0.61	1.8	1.6	0.01	-0.3	-0.4	0.00	13.16	13.30	5.88	5.82
1130	68.5	68.4	0.57	1.6	1.5	0.01	-0.3	-0.3	0.00	13.32	13.47	5.83	5.77
1131	69.9	69.8	0.58	1.5	1.3	0.01	-0.3	-0.4	0.00	13.94	14.10	5.43	5.36
1132	66.6	66.6	0.55	1.4	1.3	0.01	-0.3	-0.3	0.00	13.81	13.96	5.42	5.35
1133	62.4	62.4	0.52	1.3	1.2	0.01	-0.3	-0.3	0.00	13.85	14.00	5.39	5.33
1134	56.3	56.2	0.47	1.3	1.2	0.01	-0.2	-0.2	0.00	13.96	14.12	5.18	5.12
1135	51.3	51.2	0.42	1.4	1.2	0.01	-0.2	-0.3	0.00	14.14	14.30	4.97	4.90
1136	50.3	50.2	0.42	1.3	1.1	0.01	-0.2	-0.3	0.00	14.42	14.58	4.95	4.88
1137	69.7	69.7	0.58	1.1	0.9	0.00	-0.2	-0.3	0.00	14.67	14.84	4.87	4.81
1138	63.6	63.5	0.53	1.0	0.9	0.00	-0.2	-0.2	0.00	14.35	14.51	5.07	5.01
1139	66.5	66.4	0.55	1.0	0.8	0.00	-0.2	-0.2	0.00	14.74	14.91	4.83	4.77
1140	66.8	66.7	0.55	1.0	0.9	0.00	-0.1	-0.1	0.00	14.87	15.04	4.62	4.55
1141	65.1	65.0	0.54	1.1	0.9	0.00	-0.1	-0.2	0.00	14.60	14.77	4.72	4.65
1142	56.2	56.1	0.47	1.0	0.9	0.00	-0.2	-0.2	0.00	14.78	14.95	4.55	4.48
1143	47.2	47.0	0.39	1.1	0.9	0.00	-0.2	-0.2	0.00	14.98	15.15	4.39	4.32
1144	39.5	39.3	0.33	1.2	1.0	0.01	-0.1	-0.2	0.00	15.47	15.65	4.04	3.97
1145	33.7	33.6	0.28	1.4	1.3	0.01	-0.1	-0.2	0.00	15.69	15.87	3.70	3.63
1146	26.0	25.8	0.21	1.2	1.0	0.01	-0.1	-0.2	0.00	14.88	15.05	4.18	4.12
1147	34.8	34.7	0.29	1.5	1.3	0.01	-0.1	-0.2	0.00	15.22	15.40	4.14	4.07
1148	35.3	35.2	0.29	1.3	1.2	0.01	-0.2	-0.2	0.00	15.91	16.10	3.71	3.64
1149	27.0	26.8	0.22	1.2	1.0	0.01	-0.1	-0.2	0.00	15.32	15.50	4.00	3.93
1150	25.3	25.2	0.21	1.3	1.2	0.01	-0.1	-0.2	0.00	15.26	15.44	4.10	4.03
1151	25.2	25.0	0.21	1.3	1.2	0.01	-0.2	-0.2	0.00	15.75	15.94	3.81	3.74
1152	30.3	30.1	0.25	1.9	1.8	0.01	-0.1	-0.2	0.00	15.52	15.70	4.03	3.96
1153	48.6	48.5	0.40	0.9	0.8	0.00	-0.1	-0.1	0.00	15.73	15.92	3.83	3.76
1154	50.6	50.5	0.42	1.4	1.2	0.01	-0.1	-0.2	0.00	15.22	15.40	4.14	4.07
1155	59.4	59.3	0.49	1.5	1.3	0.01	-0.1	-0.2	0.00	14.93	15.10	4.22	4.16
1156	66.6	66.6	0.55	1.4	1.2	0.01	-0.2	-0.3	0.00	14.48	14.64	4.53	4.46
1157	71.9	71.8	0.59	1.3	1.2	0.01	-0.1	-0.2	0.00	14.24	14.40	4.79	4.72
1158	74.7	74.7	0.62	1.3	1.1	0.01	-0.2	-0.2	0.00	13.97	14.13	4.99	4.93
1159	78.6	78.6	0.65	1.3	1.2	0.01	-0.1	-0.2	0.00	13.93	14.09	5.02	4.95
1200	77.6	77.6	0.64	1.3	1.2	0.01	-0.1	-0.2	0.00	14.08	14.24	4.93	4.86
1201	77.6	77.5	0.64	1.3	1.1	0.01	-0.2	-0.2	0.00	14.07	14.23	4.93	4.86
1202	76.2	76.2	0.63	1.4	1.3	0.01	-0.2	-0.2	0.00	14.07	14.23	4.93	4.87
1203	76.5	76.5	0.63	1.2	1.0	0.01	-0.1	-0.2	0.00	13.82	13.97	5.08	5.02
1204	75.9	75.9	0.63	1.0	0.9	0.00	-0.1	-0.2	0.00	13.72	13.87	5.11	5.04
1205	68.3	68.2	0.57	1.1	1.0	0.00	-0.1	-0.2	0.00	14.31	14.47	4.65	4.58
1206	70.2	70.2	0.58	1.3	1.1	0.01	-0.1	-0.2	0.00	13.75	13.90	4.93	4.87
1207	72.9	72.8	0.60	1.7	1.6	0.01	-0.1	-0.2	0.00	14.16	14.32	4.73	4.67
1208	55.1	55.0	0.46	3.1	3.0	0.02	-0.1	-0.2	0.00	13.78	13.93	5.28	5.21
1209	55.0	54.9	0.45	1.4	1.2	0.01	-0.2	-0.2	0.00	14.56	14.73	4.86	4.79
1210	66.3	66.2	0.55	1.6	1.5	0.01	-0.1	-0.2	0.00	14.09	14.25	5.12	5.06
1211	63.6	63.5	0.53	1.7	1.5	0.01	-0.1	-0.2	0.00	13.97	14.13	5.16	5.10
1212	67.9	67.8	0.56	1.7	1.5	0.01	0.0	-0.1	0.00	14.07	14.23	5.07	5.01
1213	67.6	67.5	0.56	1.4	1.2	0.01	-0.1	-0.1	0.00	14.23	14.39	4.98	4.91
1214	69.7	69.6	0.58	1.2	1.1	0.01	-0.1	-0.1	0.00	14.86	15.03	4.54	4.47
1215	56.5	56.4	0.47	1.2	1.1	0.01	-0.1	-0.1	0.00	15.15	15.33	4.28	4.21
1216	48.7	48.5	0.40	1.4	1.3	0.01	0.0	-0.1	0.00	14.29	14.45	4.71	4.64
1217	46.2	46.1	0.38	2.3	2.2	0.01	-0.1	-0.1	0.00	14.67	14.84	4.41	4.35
1218	56.1	56.0	0.46	1.4	1.2	0.01	-0.1	-0.1	0.00	15.65	15.83	3.71	3.64
1219	48.3	48.2	0.40	1.2	1.0	0.01	-0.1	-0.1	0.00	14.80	14.97	4.23	4.16
1220	47.8	47.7	0.39	1.3	1.1	0.01	-0.1	-0.1	0.00	14.75	14.92	4.43	4.36
1221	51.8	51.7	0.43	1.2	1.0	0.01	-0.1	-0.1	0.00	15.67	15.85	3.88	3.81
1222	44.5	44.3	0.37	1.1	0.9	0.00	-0.1	-0.1	0.00	15.21	15.39	4.07	4.00
1223	41.2	41.1	0.34	1.3	1.1	0.01	0.0	-0.1	0.00	14.90	15.07	4.35	4.28
1224	45.9	45.8	0.38	1.2	1.0	0.01	0.0	-0.1	0.00	15.71	15.89	3.86	3.79
1225	34.7	34.6	0.29	0.9	0.8	0.00	0.0	-0.1	0.00	15.20	15.38	4.31	4.24
1226	61.3	61.2	0.51	0.9	0.8	0.00	-0.1	-0.2	0.00	15.74	15.93	3.97	3.90
1227	63.0	62.9	0.52	1.1	0.9	0.00	-0.1	-0.1	0.00	15.29	15.47	4.25	4.18
1228	64.4	64.3	0.53	1.1	0.9	0.00	0.0	-0.1	0.00	15.20	15.38	4.36	4.29
1229	68.5	68.4	0.57	0.9	0.7	0.00	-0.1	-0.1	0.00	15.27	15.45	4.16	4.09
1230	75.0	75.0	0.62	0.8	0.6	0.00	0.0	-0.1	0.00	14.99	15.16	4.33	4.26
1231	88.6	88.6	0.73	0.8	0.7	0.00	-0.1	-0.1	0.00	14.89	15.06	4.38	4.31
1232	93.7	93.7	0.78	0.8	0.7	0.00	-0.1	-0.2	0.00	14.95	15.12	4.42	4.36
1233	96.0	96.0	0.80	0.8	0.7	0.00	0.0	-0.1	0.00	14.99	15.16	4.47	4.40
1234	99.0	99.0	0.82	0.9	0.7	0.00	0.0	-0.1	0.00	14.96	15.13	4.48	4.4

Table 7
Continuous Emissions Measurements Results
Run 129-3
10/08/14

Time (1-min)	NOx (ppm)	NOx (ppm Cor.)	CO (lb/hr)	CO (ppm)	CO (ppm Cor.)	SO2 (ppm)	SO2 (ppm Cor.)	lb/hr)	O2 (%)	O2 (% Cor.)	CO2 (%)	CO2 (% Cor.)	
1405	23.8	23.6	0.20	0.7	0.5	0.00	0.0	-0.3	0.00	16.82	17.01	3.14	3.07
1406	29.0	28.9	0.25	1.7	1.5	0.01	0.0	-0.3	0.00	15.40	15.56	4.48	4.43
1407	51.0	51.0	0.44	10.7	10.9	0.06	0.0	-0.3	0.00	15.06	15.22	4.65	4.60
1408	55.5	55.5	0.47	17.8	18.4	0.10	0.1	-0.2	0.00	16.10	16.27	3.86	3.80
1409	63.4	63.5	0.54	6.7	6.8	0.04	0.1	-0.2	0.00	15.60	15.77	4.25	4.19
1410	68.8	69.0	0.59	6.7	6.8	0.04	0.1	-0.2	0.00	15.51	15.68	4.26	4.20
1411	50.2	50.2	0.43	6.3	6.3	0.03	0.0	-0.4	0.00	15.57	15.74	4.20	4.14
1412	42.7	42.6	0.36	5.1	5.1	0.03	0.0	-0.3	0.00	15.84	16.01	3.97	3.91
1413	37.9	37.8	0.32	3.7	3.6	0.02	0.0	-0.3	0.00	16.01	16.18	3.72	3.66
1414	38.1	38.1	0.33	3.7	3.7	0.02	-0.1	-0.4	0.00	15.87	16.04	3.74	3.69
1415	30.9	30.8	0.26	3.1	3.0	0.02	0.0	-0.3	0.00	15.86	16.03	3.88	3.82
1416	25.6	25.5	0.22	2.2	2.1	0.01	0.0	-0.3	0.00	16.02	16.19	3.82	3.76
1417	21.6	21.4	0.18	2.0	1.9	0.01	0.0	-0.3	0.00	16.19	16.37	3.70	3.64
1418	20.5	20.3	0.17	1.8	1.7	0.01	-0.1	-0.4	0.00	16.67	16.85	3.40	3.34
1419	20.2	20.0	0.17	1.6	1.4	0.01	-0.1	-0.4	0.00	16.40	16.58	3.53	3.46
1420	19.0	18.8	0.16	1.4	1.3	0.01	-0.1	-0.4	0.00	16.21	16.39	3.70	3.64
1421	19.3	19.1	0.16	1.4	1.3	0.01	0.0	-0.3	0.00	16.27	16.45	3.65	3.59
1422	19.6	19.4	0.17	1.3	1.2	0.01	-0.1	-0.4	0.00	16.81	17.00	3.27	3.21
1423	18.9	18.7	0.16	1.1	1.0	0.01	-0.1	-0.4	0.00	16.35	16.53	3.45	3.39
1424	18.2	18.0	0.15	1.2	1.0	0.01	-0.1	-0.4	0.00	16.16	16.34	3.52	3.46
1425	30.2	30.1	0.26	1.1	1.0	0.01	-0.1	-0.4	0.00	15.96	16.13	3.86	3.81
1426	52.3	52.4	0.45	1.1	0.9	0.00	0.0	-0.3	0.00	16.05	16.22	3.95	3.89
1427	57.4	57.5	0.49	0.9	0.8	0.00	-0.1	-0.4	0.00	15.94	16.11	3.99	3.93
1428	59.0	59.1	0.51	1.0	0.9	0.00	0.0	-0.3	0.00	16.38	16.56	3.60	3.54
1429	54.4	54.5	0.47	1.2	1.0	0.01	0.0	-0.3	0.00	16.00	16.17	3.83	3.77
1430	42.9	42.9	0.37	1.5	1.4	0.01	-0.1	-0.4	0.00	15.93	16.10	3.79	3.73
1431	39.8	39.7	0.34	1.3	1.2	0.01	0.0	-0.3	0.00	16.00	16.17	3.78	3.72
1432	43.6	43.6	0.37	1.1	0.9	0.00	0.0	-0.3	0.00	16.44	16.62	3.50	3.44
1433	47.1	47.1	0.40	1.1	1.0	0.00	0.0	-0.3	0.00	15.76	15.93	3.85	3.79
1434	46.4	46.4	0.40	1.3	1.1	0.01	0.0	-0.3	0.00	15.67	15.84	3.85	3.79
1435	48.9	48.9	0.42	1.3	1.1	0.01	-0.1	-0.4	0.00	16.26	16.44	3.37	3.31
1436	39.9	39.9	0.34	1.2	1.0	0.01	0.0	-0.3	0.00	16.13	16.31	3.40	3.34
1437	37.5	37.4	0.32	1.2	1.0	0.01	0.0	-0.3	0.00	15.72	15.89	3.85	3.79
1438	41.3	41.3	0.35	1.2	1.1	0.01	-0.1	-0.4	0.00	15.85	16.02	3.81	3.75
1439	42.7	42.7	0.37	1.1	1.0	0.01	-0.1	-0.4	0.00	16.51	16.69	3.35	3.28
1440	33.1	33.0	0.28	1.2	1.0	0.01	0.0	-0.3	0.00	15.83	16.00	3.79	3.73
1441	28.3	28.2	0.24	1.2	1.0	0.01	0.0	-0.3	0.00	15.73	15.90	3.88	3.83
1442	38.8	38.7	0.33	1.1	0.9	0.00	-0.1	-0.4	0.00	16.41	16.59	3.35	3.29
1443	31.9	31.8	0.27	1.0	0.8	0.00	0.0	-0.3	0.00	15.92	16.09	3.60	3.54
1444	33.0	32.9	0.28	1.1	0.9	0.00	0.0	-0.3	0.00	15.73	15.90	3.79	3.73
1445	43.0	43.0	0.37	0.8	0.7	0.00	0.0	-0.3	0.00	15.83	16.00	3.69	3.63
1446	44.2	44.2	0.38	0.9	0.8	0.00	0.0	-0.3	0.00	15.89	16.06	3.57	3.51
1447	33.0	32.9	0.28	1.1	0.9	0.00	0.0	-0.3	0.00	15.28	15.44	4.24	4.18
1448	73.6	73.8	0.63	1.5	1.3	0.01	0.1	-0.2	0.00	16.49	16.67	3.24	3.17
1449	65.8	66.0	0.56	1.7	1.6	0.01	0.1	-0.2	0.00	15.40	15.56	4.14	4.09
1450	76.4	76.6	0.65	1.8	1.6	0.01	0.1	-0.2	0.00	15.54	15.71	4.05	4.00
1451	78.3	78.5	0.67	1.5	1.4	0.01	0.0	-0.3	0.00	15.62	15.79	4.00	3.94
1452	77.0	77.2	0.66	1.6	1.4	0.01	0.0	-0.3	0.00	15.20	15.36	4.23	4.17
1453	74.7	74.9	0.64	1.7	1.6	0.01	0.0	-0.3	0.00	15.00	15.16	4.40	4.34
1454	68.8	68.9	0.59	1.5	1.3	0.01	0.0	-0.3	0.00	14.99	15.15	4.41	4.35
1455	79.0	79.2	0.68	1.1	0.9	0.00	0.1	-0.2	0.00	14.91	15.07	4.50	4.45
1456	85.8	86.1	0.74	1.2	1.0	0.01	0.0	-0.3	0.00	15.57	15.74	4.05	3.99
1457	86.5	86.8	0.74	1.2	1.0	0.01	0.1	-0.2	0.00	15.10	15.26	4.28	4.22
1458	82.7	83.0	0.71	1.1	0.9	0.00	0.1	-0.2	0.00	15.23	15.39	4.09	4.03
1459	76.2	76.5	0.65	1.5	1.4	0.01	0.1	-0.2	0.00	15.55	15.72	3.80	3.75
1500	65.2	65.4	0.56	1.3	1.1	0.01	0.0	-0.3	0.00	15.66	15.83	3.73	3.67
1501	69.1	69.3	0.59	1.4	1.3	0.01	0.1	-0.2	0.00	15.17	15.33	4.18	4.13
1502	58.5	58.6	0.50	2.0	1.9	0.01	0.1	-0.2	0.00	14.48	14.63	4.76	4.70
1503	81.2	81.5	0.70	1.6	1.5	0.01	0.1	-0.2	0.00	15.27	15.43	4.25	4.20
1504	93.4	93.8	0.80	1.9	1.8	0.01	0.1	-0.2	0.00	14.62	14.77	4.71	4.66
1505	106.1	106.6	0.91	1.9	1.8	0.01	0.0	-0.3	0.00	14.55	14.70	4.76	4.70
1506	107.9	108.4	0.93	2.2	2.0	0.01	0.1	-0.2	0.00	14.89	15.05	4.53	4.48
1507	105.0	105.5	0.90	2.0	1.9	0.01	0.1	-0.2	0.00	14.32	14.47	4.68	4.63
1508	102.9	103.3	0.88	2.4	2.3	0.01	0.1	-0.2	0.00	14.10	14.24	5.05	5.00
1509	111.7	112.2	0.96	2.1	2.0	0.01	0.1	-0.2	0.00	14.57	14.72	4.85	4.80
1510	127.0	127.6	1.09	1.9	1.8	0.01	0.1	-0.2	0.00	14.31	14.46	4.81	4.76
1511	137.3	138.0	1.18	2.2	2.1	0.01	0.1	-0.2	0.00	14.07	14.21	4.90	4.85
1512	138.4	139.1	1.19	2.8	2.7	0.01	0.2	-0.1	0.00	14.34	14.49	4.77	4.71
1513	132.6	133.3	1.14	2.3	2.2	0.01	0.2	-0.1	0.00	14.55	14.70	4.61	4.55
1514	131.6	132.3	1.13	2.3	2.2	0.01	0.2	-0.1	0.00	14.17	14.32	4.97	4.92
1515	127.5	128.1	1.09	3.4	3.3	0.02	0.2	-0.1	0.00	14.49	14.64	4.79	4.74
1516	128.5	129.1	1.10	2.7	2.6	0.01	0.2	-0.1	0.00	14.54	14.69	4.69	4.64
1517	114.0	114.5	0.98	2.9	2.8	0.01	0.2	-0.1	0.00	13.88	14.02	5.13	5.08
1518	97.6	98.0	0.84	1.7	1.5	0.01	0.2	-0.1	0.00	14.07	14.21	5.04	4.99
1519	99.8	100.2	0.86	1.6	1.5	0.01	0.2	-0.1	0.00	13.63	13.77	5.34	5.29
1520	102.2	102.6	0.88	1.7	1.6	0.01	0.3	0.0	0.00	13.56	13.70	5.36	5.32
1521	106.6	107.1	0.91	1.8	1.6	0.01	0.3	0.0	0.00	13.44	13.57	5.47	5.42
1522	113.3	113.8	0.97	1.6	1.4	0.01	0.3	0.0	0.00	13.61	13.75	5.24	5.19
1523	111.0	111.5	0.95	2.0	1.9	0.01	0.3	0.0	0.00	13.82	13.96	4.96	4.91
1524	117.4	118.0	1.01	2.1	1.9	0.01	0.3	0.0	0.00	13.99	14.13	4.84	4.78
1525	116.7	117.3	1.00	2.1	1.9	0.01	0.4	0.1	0.00	14.21	14.36	4.77	4.72
1526	115.9	116.4	1.00	2.0	1.8	0.01	0.3	0.0	0.00	13.78	13.92	5.15	5.10
1527	117.3	117.9	1.01	2.0	1.9	0.01	0.3	0.0	0.00	14.41	14.56	4.77	4.72
1528	116.4	116.9	1.00	1.7	1.6	0.01	0.4	0.1	0.00	13.82	13.96		

Table 8
 Continuous Emissions Measurements Results
 15-3
 10/08/14

Time (1-min)	NOx (ppm)	NOx (ppm Cor.)	NOx (lb/hr)	CO (ppm)	CO (ppm Cor.)	CO (lb/hr)	SO2 (ppm)	SO2 (ppm Cor.)	SO2 (lb/hr)	O2 (%)	O2 (% Cor.)	CO2 (%)	CO2 (% Cor.)
1637	29.1	29.1	0.26	0.9	0.8	0.00	0.2	0.0	0.00	16.52	16.70	3.28	3.31
1638	25.3	25.3	0.23	1.2	1.1	0.01	0.2	0.0	0.00	14.85	15.01	4.76	4.79
1639	61.0	61.3	0.55	2.0	1.9	0.01	0.2	0.1	0.00	15.83	16.00	4.06	4.09
1640	68.3	68.8	0.61	2.5	2.4	0.01	0.2	0.0	0.00	15.60	15.77	4.23	4.26
1641	84.9	85.5	0.76	3.0	2.9	0.02	0.2	0.0	0.00	15.31	15.47	4.43	4.46
1642	99.8	100.6	0.90	3.4	3.3	0.02	0.2	0.0	0.00	15.32	15.48	4.39	4.42
1643	104.2	105.0	0.94	3.1	3.0	0.02	0.2	0.0	0.00	15.23	15.39	4.44	4.47
1644	101.1	101.9	0.91	2.5	2.4	0.01	0.1	0.0	0.00	14.75	14.90	4.69	4.72
1645	97.9	98.7	0.88	2.5	2.4	0.01	0.1	0.0	0.00	14.56	14.71	4.71	4.74
1646	92.6	93.3	0.83	3.1	3.0	0.02	0.1	-0.1	0.00	14.87	15.03	4.43	4.47
1647	84.1	84.7	0.76	2.2	2.1	0.01	0.1	0.0	0.00	15.28	15.44	4.28	4.31
1648	83.3	83.9	0.75	1.9	1.8	0.01	0.2	0.0	0.00	14.97	15.13	4.50	4.53
1649	77.3	77.8	0.69	1.6	1.5	0.01	0.1	0.0	0.00	14.94	15.10	4.55	4.58
1650	77.4	78.0	0.70	1.6	1.5	0.01	0.1	0.0	0.00	14.94	15.10	4.55	4.58
1651	75.9	76.5	0.68	1.4	1.3	0.01	0.2	0.0	0.00	15.48	15.65	4.23	4.26
1652	77.3	77.9	0.70	1.2	1.1	0.01	0.1	0.0	0.00	15.22	15.38	4.36	4.40
1653	72.4	72.9	0.65	1.1	1.0	0.01	0.2	0.0	0.00	15.69	15.86	4.06	4.09
1654	64.9	65.3	0.58	1.1	0.9	0.01	0.1	0.0	0.00	16.13	16.31	3.66	3.69
1655	67.7	68.2	0.61	1.1	1.0	0.01	0.1	0.0	0.00	15.52	15.69	3.97	4.00
1656	67.1	67.6	0.60	1.3	1.1	0.01	0.1	0.0	0.00	15.45	15.61	4.02	4.05
1657	60.5	60.9	0.54	1.3	1.1	0.01	0.2	0.0	0.00	15.81	15.98	3.96	3.99
1658	59.0	59.3	0.53	1.1	1.0	0.01	0.2	0.1	0.00	16.08	16.25	3.72	3.75
1659	59.6	60.0	0.54	1.1	0.9	0.00	0.2	0.0	0.00	15.61	15.78	4.08	4.11
1700	62.1	62.5	0.56	1.4	1.3	0.01	0.1	-0.1	0.00	15.27	15.43	4.36	4.39
1701	73.7	74.2	0.66	1.4	1.3	0.01	0.1	0.0	0.00	15.95	16.12	3.95	3.98
1702	73.6	74.2	0.66	1.4	1.3	0.01	0.2	0.0	0.00	15.62	15.79	4.10	4.13
1703	76.6	77.2	0.69	1.4	1.2	0.01	0.2	0.0	0.00	15.54	15.71	4.15	4.18
1704	71.0	71.5	0.64	1.2	1.1	0.01	0.1	-0.1	0.00	15.59	15.76	3.99	4.02
1705	68.8	69.3	0.62	1.3	1.1	0.01	0.1	-0.1	0.00	15.89	16.06	3.78	3.81
1706	64.4	64.8	0.58	1.2	1.0	0.01	0.1	-0.1	0.00	16.04	16.21	3.75	3.78
1707	60.8	61.1	0.55	1.2	1.1	0.01	0.0	-0.1	0.00	15.51	15.68	4.18	4.21
1708	61.3	61.7	0.55	1.1	0.9	0.00	0.0	-0.1	0.00	15.70	15.87	4.02	4.05
1709	56.1	56.4	0.50	1.2	1.0	0.01	0.1	-0.1	0.00	16.10	16.27	3.77	3.80
1710	50.7	51.0	0.46	1.1	0.9	0.01	0.0	-0.1	0.00	16.30	16.48	3.60	3.63
1711	48.4	48.7	0.43	1.1	0.9	0.00	0.0	-0.2	0.00	15.94	16.11	3.82	3.85
1712	44.9	45.1	0.40	1.1	0.9	0.00	0.0	-0.1	0.00	15.98	16.15	3.81	3.84
1713	40.2	40.4	0.36	1.0	0.8	0.00	0.0	-0.2	0.00	15.83	16.00	3.81	3.84
1714	49.0	49.2	0.44	0.9	0.7	0.00	-0.1	-0.2	0.00	16.39	16.57	3.33	3.36
1715	42.5	42.7	0.38	1.0	0.8	0.00	0.0	-0.2	0.00	15.69	15.86	3.86	3.89
1716	42.5	42.7	0.38	1.2	1.0	0.01	-0.1	-0.2	0.00	15.92	16.09	3.81	3.84
1717	42.0	42.2	0.38	1.1	0.9	0.00	-0.1	-0.2	0.00	16.50	16.68	3.43	3.46
1718	38.5	38.6	0.34	1.0	0.9	0.00	0.0	-0.2	0.00	15.99	16.16	3.71	3.74
1719	35.9	36.0	0.32	1.2	1.0	0.01	-0.1	-0.2	0.00	15.77	15.94	3.91	3.94
1720	40.3	40.5	0.36	1.2	1.0	0.01	-0.1	-0.3	0.00	16.14	16.32	3.67	3.70
1721	31.8	31.9	0.28	0.9	0.7	0.00	-0.1	-0.3	0.00	16.24	16.42	3.65	3.67
1722	50.1	50.3	0.45	0.8	0.6	0.00	-0.1	-0.3	0.00	16.53	16.71	3.42	3.45
1723	39.4	39.6	0.35	0.8	0.6	0.00	-0.1	-0.3	0.00	16.22	16.40	3.50	3.53
1724	37.1	37.2	0.33	0.8	0.6	0.00	-0.1	-0.3	0.00	16.21	16.39	3.43	3.46
1725	35.1	35.2	0.31	0.8	0.6	0.00	-0.1	-0.3	0.00	16.66	16.84	3.20	3.22
1726	37.5	37.6	0.34	0.8	0.7	0.00	-0.1	-0.2	0.00	16.09	16.26	3.70	3.73
1727	41.1	41.2	0.37	0.8	0.6	0.00	-0.1	-0.3	0.00	16.22	16.40	3.69	3.72
1728	35.6	35.7	0.32	0.9	0.7	0.00	-0.1	-0.2	0.00	16.42	16.60	3.52	3.55
1729	46.1	46.3	0.41	1.8	1.6	0.01	-0.1	-0.2	0.00	15.08	15.24	4.36	4.39
1730	61.1	61.5	0.55	1.4	1.2	0.01	-0.1	-0.3	0.00	16.49	16.67	3.35	3.38
1731	41.5	41.7	0.37	1.4	1.2	0.01	-0.2	-0.4	0.00	16.47	16.65	3.36	3.39
1732	46.4	46.6	0.42	1.1	0.9	0.00	-0.1	-0.2	0.00	15.47	15.63	4.01	4.04
1733	55.4	55.7	0.50	1.4	1.3	0.01	-0.1	-0.3	0.00	16.21	16.39	3.49	3.52
1734	36.8	36.9	0.33	1.2	1.0	0.01	-0.1	-0.3	0.00	15.80	15.97	3.71	3.74
1735	60.0	60.4	0.54	1.0	0.8	0.00	-0.1	-0.3	0.00	16.13	16.31	3.37	3.40
1736	46.3	46.5	0.42	1.3	1.1	0.01	-0.1	-0.3	0.00	15.82	15.99	3.72	3.75
Ave	58.9	59.3	0.53	1.4	1.3	0.01	0.0	-0.1	0.00	15.76	15.93	3.93	3.96

SMM - Pogo Mine

10/8/2014

Timestamp	Record	O2	CO2	SO2	NO	NO2	NOx	CO
	Number	(%)	(%)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
10/8/2014 7:31	5134	20.55	-0.16	0.2	-0.1	-0.1	-0.1	1.0
10/8/2014 7:32	5135	20.55	-0.16	0.1	-0.1	-0.1	-0.1	0.9
10/8/2014 7:33	5136	20.54	-0.16	0.1	-0.1	-0.1	-0.1	0.9
10/8/2014 7:34	5137	20.92	14.90	0.7	0.0	-0.2	-0.1	0.8
10/8/2014 7:35	5138	20.82	19.83	12.2	-0.1	-0.1	-0.1	0.4
10/8/2014 7:36	5139	0.37	0.05	88.9	27.8	14.1	42.0	65.0
10/8/2014 7:37	5140	0.09	-0.01	91.9	92.5	-0.6	92.0	93.8
10/8/2014 7:38	5141	0.03	-0.01	89.2	92.5	-0.4	92.2	NAN
10/8/2014 7:39	5142	0.00	-0.01	91.8	94.8	-0.7	94.1	NAN
10/8/2014 7:40	5143	-0.02	-0.01	93.8	92.4	-0.3	92.2	NAN
10/8/2014 7:41	5144	-0.02	-0.01	99.6	135.3	-3.4	128.4	NAN
10/8/2014 7:42	5145	-0.01	0.00	99.6	175.4	-0.4	175.2	NAN
10/8/2014 7:43	5146	0.04	0.05	99.6	179.3	0.0	179.4	NAN
10/8/2014 7:44	5147	11.78	12.25	32.6	176.2	-0.6	172.5	NAN
10/8/2014 7:45	5148	21.04	20.79	1.3	11.2	12.8	24.1	2.8
10/8/2014 7:46	5149	9.24	8.50	72.6	4.5	3.1	6.1	NAN
10/8/2014 7:47	5150	0.07	0.12	99.6	168.2	-3.8	151.9	NAN
10/8/2014 7:48	5151	0.05	0.03	99.6	180.2	-0.2	180.1	NAN
10/8/2014 7:49	5152	0.04	-0.08	92.7	155.2	13.6	169.0	NAN
10/8/2014 7:50	5153	0.03	-0.13	91.6	94.7	0.1	95.0	90.6
10/8/2014 7:51	5154	0.03	-0.13	91.6	94.5	0.1	94.7	90.7
10/8/2014 7:52	5155	0.03	-0.05	91.6	94.4	0.1	94.6	90.5
10/8/2014 7:53	5156	7.60	8.15	10.9	72.6	9.4	82.1	43.0
10/8/2014 7:54	5157	9.93	9.96	1.3	1.6	-1.1	0.6	0.3
10/8/2014 7:55	5158	9.93	9.97	1.2	0.1	0.0	0.2	0.2
10/8/2014 7:56	5159	4.21	2.45	40.1	1.5	5.3	6.8	19.7
10/8/2014 7:57	5160	0.03	0.10	49.8	47.3	3.0	50.4	47.7
10/8/2014 7:58	5161	0.03	0.10	49.8	50.2	0.1	50.4	47.8
10/8/2014 7:59	5162	0.03	0.10	49.8	50.1	0.1	50.4	47.8
10/8/2014 8:00	5163	0.03	0.10	49.8	50.0	0.1	50.3	50.0
10/8/2014 8:01	5164	0.03	0.10	49.8	50.0	0.1	50.3	50.0
10/8/2014 8:02	5165	9.89	0.53	20.6	48.4	1.2	49.8	37.0
10/8/2014 8:03	5166	10.30	8.39	3.8	9.6	8.1	17.9	6.3
10/8/2014 8:04	5167	9.91	9.73	0.9	0.3	-0.1	0.2	0.3
10/8/2014 8:05	5168	4.25	3.97	60.9	2.3	3.2	5.6	28.5
10/8/2014 8:06	5169	0.07	0.12	88.8	86.9	-2.7	82.2	93.3
10/8/2014 8:07	5170	0.07	0.10	89.3	93.0	-0.1	93.0	94.5
10/8/2014 8:08	5171	0.05	0.10	63.4	91.9	-0.2	91.9	80.7
10/8/2014 8:09	5172	0.04	0.10	48.8	51.7	4.7	56.6	50.1
10/8/2014 8:10	5173	0.03	0.10	48.6	49.7	0.1	50.0	49.9
10/8/2014 8:11	5174	9.43	1.59	24.9	48.9	-0.1	49.0	34.4
10/8/2014 8:12	5175	16.58	3.12	2.1	21.1	2.3	23.7	1.2
10/8/2014 8:13	5176	16.57	3.15	1.2	19.3	-0.1	19.5	0.8

SMM - Pogo Mine

10/8/2014

Timestamp	Record	O2	CO2	SO2	NO	NO2	NOx	CO
	Number	(%)	(%)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
10/8/2014 8:14	5177	16.78	2.90	1.0	19.5	0.8	20.5	0.8
10/8/2014 8:15	5178	16.88	2.81	0.8	20.2	-1.2	19.2	4.2
10/8/2014 8:16	5179	14.20	4.94	0.8	31.3	0.8	32.3	43.6
10/8/2014 8:17	5180	15.94	3.96	0.7	49.9	-1.4	48.6	4.4
10/8/2014 8:18	5181	14.80	4.72	0.6	32.8	0.7	33.8	2.7
10/8/2014 8:19	5182	14.76	4.72	0.6	29.9	2.8	33.0	1.8
10/8/2014 8:20	5183	15.18	4.46	0.6	36.0	0.7	36.9	1.1
10/8/2014 8:21	5184	13.81	5.33	0.6	37.6	1.2	39.1	1.4
10/8/2014 8:22	5185	13.70	5.39	0.5	31.3	0.6	32.1	1.3
10/8/2014 8:23	5186	13.80	5.35	0.6	29.8	1.0	31.1	1.3
10/8/2014 8:24	5187	13.92	5.27	0.5	30.8	0.7	31.7	1.6
10/8/2014 8:25	5188	14.34	4.86	0.5	29.8	0.5	30.4	2.5
10/8/2014 8:26	5189	14.09	4.90	0.5	28.2	0.6	29.0	1.7
10/8/2014 8:27	5190	14.01	5.03	0.4	27.6	0.8	28.7	1.3
10/8/2014 8:28	5191	14.08	5.06	0.4	26.6	0.9	27.7	1.2
10/8/2014 8:29	5192	14.40	4.87	0.4	27.6	1.1	28.9	1.2
10/8/2014 8:30	5193	15.37	4.23	0.4	29.5	0.4	30.2	1.1
10/8/2014 8:31	5194	15.05	4.41	0.5	31.3	1.5	33.0	1.2
10/8/2014 8:32	5195	14.95	4.44	0.4	30.1	0.8	31.1	1.1
10/8/2014 8:33	5196	15.04	4.38	0.4	31.1	0.4	31.8	1.0
10/8/2014 8:34	5197	15.98	3.80	0.4	31.1	-0.4	30.9	0.9
10/8/2014 8:35	5198	15.02	4.50	0.4	30.5	0.9	31.6	1.1
10/8/2014 8:36	5199	15.35	4.09	0.4	51.2	-0.2	51.2	1.2
10/8/2014 8:37	5200	14.88	4.42	0.3	36.0	0.4	36.6	2.0
10/8/2014 8:38	5201	15.36	4.25	0.4	40.3	0.5	41.1	1.3
10/8/2014 8:39	5202	14.90	4.56	0.4	45.8	0.2	46.2	1.4
10/8/2014 8:40	5203	13.64	5.53	0.4	42.4	2.6	45.3	21.1
10/8/2014 8:41	5204	14.98	4.54	0.4	97.5	0.8	97.8	3.7
10/8/2014 8:42	5205	14.04	5.19	0.3	47.5	1.4	49.1	1.5
10/8/2014 8:43	5206	14.95	4.60	0.4	74.3	1.9	76.3	1.2
10/8/2014 8:44	5207	14.75	4.69	0.4	40.6	2.3	42.9	1.3
10/8/2014 8:45	5208	13.77	5.26	0.3	45.4	-0.4	45.1	1.5
10/8/2014 8:46	5209	13.97	5.00	0.3	55.7	0.4	56.3	1.0
10/8/2014 8:47	5210	14.23	4.81	0.3	38.3	1.6	40.2	1.2
10/8/2014 8:48	5211	14.95	4.49	0.3	27.4	1.2	28.8	1.2
10/8/2014 8:49	5212	15.94	3.73	0.2	21.3	1.7	23.3	1.2
10/8/2014 8:50	5213	15.48	4.21	0.2	30.6	1.8	32.6	1.0
10/8/2014 8:51	5214	15.27	4.38	0.3	27.5	1.1	28.9	1.3
10/8/2014 8:52	5215	15.41	4.19	0.2	36.8	3.3	40.3	3.2
10/8/2014 8:53	5216	15.08	4.40	0.2	37.1	0.8	38.1	1.2
10/8/2014 8:54	5217	15.05	4.44	0.2	34.1	1.5	35.8	1.1
10/8/2014 8:55	5218	15.62	4.06	0.2	33.4	0.9	34.5	1.1
10/8/2014 8:56	5219	14.75	4.43	0.2	23.1	1.4	24.8	1.7

SMM - Pogo Mine

10/8/2014

Timestamp	Record	O2	CO2	SO2	NO	NO2	NOx	CO
	Number	(%)	(%)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
10/8/2014 8:57	5220	14.60	4.55	0.2	23.5	0.4	24.2	1.3
10/8/2014 8:58	5221	14.72	4.60	0.2	27.6	0.7	28.5	1.1
10/8/2014 8:59	5222	14.92	4.51	0.2	30.3	0.4	30.9	1.0
10/8/2014 9:00	5223	15.26	4.31	0.2	32.9	0.8	33.9	0.9
10/8/2014 9:01	5224	15.84	3.85	0.1	34.2	1.4	35.8	0.9
10/8/2014 9:02	5225	15.17	4.22	0.2	35.4	1.9	37.6	1.0
10/8/2014 9:03	5226	15.23	4.18	0.2	32.0	0.8	33.0	1.0
10/8/2014 9:04	5227	15.34	4.10	0.1	32.7	0.8	33.8	0.9
10/8/2014 9:05	5228	15.62	3.85	0.1	33.9	1.0	35.2	0.9
10/8/2014 9:06	5229	16.83	2.83	0.2	34.1	1.1	35.4	0.8
10/8/2014 9:07	5230	15.18	4.17	0.2	34.2	0.8	35.2	1.1
10/8/2014 9:08	5231	15.55	4.00	0.2	40.7	-2.4	38.4	1.3
10/8/2014 9:09	5232	15.41	4.13	0.2	35.3	0.6	36.0	1.3
10/8/2014 9:10	5233	15.75	3.94	0.2	33.0	1.1	34.3	1.5
10/8/2014 9:11	5234	15.63	3.97	0.2	26.9	1.4	28.5	1.4
10/8/2014 9:12	5235	14.65	4.45	0.2	25.4	1.3	26.9	1.3
10/8/2014 9:13	5236	15.03	4.25	0.2	29.7	2.1	32.0	1.5
10/8/2014 9:14	5237	15.12	4.16	0.1	24.7	1.0	25.9	1.1
10/8/2014 9:15	5238	14.38	4.52	0.1	27.6	0.3	28.2	1.1
10/8/2014 9:16	5239	14.50	4.36	0.1	26.8	0.8	27.9	1.2
10/8/2014 9:17	5240	14.62	4.44	0.1	22.3	0.7	23.2	1.3
10/8/2014 9:18	5241	14.83	4.44	0.1	24.1	1.0	25.4	1.4
10/8/2014 9:19	5242	14.32	4.72	0.1	41.5	0.5	42.3	1.7
10/8/2014 9:20	5243	15.13	4.18	0.0	31.1	2.6	33.9	2.7
10/8/2014 9:21	5244	14.89	4.30	0.0	21.2	1.5	23.0	1.3
10/8/2014 9:22	5245	15.66	3.76	0.1	19.7	0.8	20.8	1.1
10/8/2014 9:23	5246	15.95	3.69	0.0	28.9	0.7	29.8	0.9
10/8/2014 9:24	5247	15.81	3.86	0.0	23.2	2.8	26.3	0.9
10/8/2014 9:25	5248	15.82	3.74	0.0	42.9	1.7	44.8	0.8
10/8/2014 9:26	5249	15.57	3.89	0.0	39.1	1.5	40.8	1.3
10/8/2014 9:27	5250	16.25	3.56	0.0	30.2	0.0	30.4	0.9
10/8/2014 9:28	5251	15.94	3.74	0.0	25.0	1.2	26.6	0.9
10/8/2014 9:29	5252	14.91	4.45	0.0	27.7	0.7	28.5	9.5
10/8/2014 9:30	5253	14.93	4.41	0.0	42.3	1.6	44.1	6.6
10/8/2014 9:31	5254	15.21	4.21	-0.1	44.0	-0.5	43.7	1.0
10/8/2014 9:32	5255	14.75	4.52	0.0	28.6	0.0	28.8	1.1
10/8/2014 9:33	5256	16.06	3.57	0.0	21.9	0.6	22.8	1.3
10/8/2014 9:34	5257	16.25	3.37	0.0	30.7	-0.1	30.9	0.8
10/8/2014 9:35	5258	16.18	3.35	0.0	36.7	1.0	38.0	0.7
10/8/2014 9:36	5259	15.41	3.99	0.0	42.8	0.0	43.1	0.9
10/8/2014 9:37	5260	15.18	4.15	0.0	37.0	1.2	38.4	1.0
10/8/2014 9:38	5261	15.48	3.90	0.0	37.1	1.0	38.3	1.0
10/8/2014 9:39	5262	16.09	3.58	0.0	34.0	0.5	34.8	0.9

SMM - Pogo Mine

10/8/2014

Timestamp	Record	O2	CO2	SO2	NO	NO2	NOx	CO
	Number	(%)	(%)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
10/8/2014 9:40	5263	16.05	3.65	-0.1	32.0	0.7	32.8	1.0
10/8/2014 9:41	5264	15.35	4.23	0.0	31.9	1.5	33.6	2.9
10/8/2014 9:42	5265	14.96	4.32	0.0	44.6	0.6	45.4	3.0
10/8/2014 9:43	5266	15.87	3.68	0.0	44.0	-1.8	42.4	2.6
10/8/2014 9:44	5267	14.88	4.22	0.0	28.3	-0.2	28.4	6.0
10/8/2014 9:45	5268	15.14	4.06	0.0	41.6	0.2	42.0	5.2
10/8/2014 9:46	5269	15.16	4.16	-0.1	59.6	1.4	61.3	1.1
10/8/2014 9:47	5270	15.12	4.22	-0.1	65.9	1.5	67.6	1.0
10/8/2014 9:48	5271	14.35	4.71	0.0	66.0	2.4	68.7	1.0
10/8/2014 9:49	5272	14.52	4.64	0.0	60.1	1.9	62.3	1.2
10/8/2014 9:50	5273	14.25	4.79	0.0	61.4	-0.5	61.1	1.2
10/8/2014 9:51	5274	14.43	4.72	0.0	37.4	7.7	45.4	1.3
10/8/2014 9:52	5275	14.89	4.40	0.0	41.1	1.0	42.4	1.2
10/8/2014 9:53	5276	14.46	4.58	0.0	40.6	1.6	42.4	1.1
10/8/2014 9:54	5277	14.78	4.25	0.0	35.2	2.2	37.6	0.9
10/8/2014 9:55	5278	15.88	3.51	0.0	31.1	-0.2	31.2	1.1
10/8/2014 9:56	5279	14.93	4.27	0.0	25.7	1.7	27.6	2.5
10/8/2014 9:57	5280	15.63	3.86	-0.1	31.0	0.3	31.5	1.0
10/8/2014 9:58	5281	15.00	4.36	0.0	28.0	2.4	30.5	1.1
10/8/2014 9:59	5282	15.91	3.71	-0.1	71.2	-0.7	70.2	1.0
10/8/2014 10:00	5283	15.37	4.15	0.0	63.1	-0.5	62.8	1.7
10/8/2014 10:01	5284	15.09	4.32	-0.1	78.1	-1.6	76.6	1.9
10/8/2014 10:02	5285	14.99	4.42	0.0	79.0	1.9	81.1	1.5
10/8/2014 10:03	5286	14.64	4.55	0.0	90.7	2.9	93.8	1.3
10/8/2014 10:04	5287	14.64	4.45	-0.1	94.2	2.2	96.7	1.9
10/8/2014 10:05	5288	14.70	4.50	-0.1	93.1	2.3	95.6	5.2
10/8/2014 10:06	5289	14.85	4.51	-0.1	92.9	2.2	95.2	5.6
10/8/2014 10:07	5290	14.76	4.57	-0.1	91.3	2.8	94.2	5.8
10/8/2014 10:08	5291	15.25	4.23	0.0	79.5	4.7	84.3	4.7
10/8/2014 10:09	5292	14.84	4.53	-0.1	71.7	0.1	71.9	3.7
10/8/2014 10:10	5293	14.85	4.51	-0.2	63.5	2.4	66.1	2.8
10/8/2014 10:11	5294	14.96	4.43	-0.2	50.4	5.3	55.9	2.2
10/8/2014 10:12	5295	14.04	4.98	-0.1	47.5	1.6	49.3	2.0
10/8/2014 10:13	5296	14.60	4.40	-0.1	52.7	1.5	54.4	1.7
10/8/2014 10:14	5297	13.78	4.97	-0.1	34.6	3.9	38.8	1.8
10/8/2014 10:15	5298	14.08	4.84	-0.1	49.1	1.9	51.3	1.6
10/8/2014 10:16	5299	14.62	4.55	-0.1	48.1	1.5	49.9	1.4
10/8/2014 10:17	5300	15.48	4.07	-0.2	31.3	0.8	32.4	1.3
10/8/2014 10:18	5301	15.30	4.16	-0.2	27.9	1.8	29.9	1.2
10/8/2014 10:19	5302	10.50	8.15	2.4	25.9	-0.7	25.3	3.6
10/8/2014 10:20	5303	9.92	9.85	-0.1	1.4	-1.1	0.4	0.2
10/8/2014 10:21	5304	9.91	9.86	-0.1	0.0	0.0	0.1	0.2
10/8/2014 10:22	5305	8.82	8.48	19.0	0.0	0.0	0.1	1.9

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Timestamp	Record	O2	CO2	SO2	NO	NO2	NOx	CO
	Number	(%)	(%)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
10/8/2014 10:23	5306	0.10	-0.08	86.5	50.6	-2.7	41.9	75.3
10/8/2014 10:24	5307	0.07	-0.08	87.9	91.4	-0.3	91.2	93.6
10/8/2014 10:25	5308	0.07	0.00	83.9	91.5	-0.1	91.5	93.6
10/8/2014 10:26	5309	0.05	-0.01	87.2	89.3	-4.6	82.9	90.1
10/8/2014 10:27	5310	0.04	0.00	88.7	91.6	0.0	91.7	91.6
10/8/2014 10:28	5311	0.04	0.03	68.4	91.0	0.7	91.7	83.0
10/8/2014 10:29	5312	0.03	0.10	49.0	56.2	0.9	57.3	48.9
10/8/2014 10:30	5313	0.03	0.10	49.1	49.0	0.1	49.3	48.0
10/8/2014 10:31	5314	0.03	0.07	49.0	49.1	0.1	49.3	47.9
10/8/2014 10:32	5315	0.03	-0.08	49.0	49.0	0.1	49.3	48.1
10/8/2014 10:33	5316	0.11	-0.01	53.7	49.1	0.0	49.3	47.9
10/8/2014 10:34	5317	14.08	4.57	6.4	56.9	4.1	61.2	14.4
10/8/2014 10:35	5318	15.10	4.49	1.0	73.3	-0.9	72.4	1.1
10/8/2014 10:36	5319	15.60	4.15	0.6	66.5	-0.2	66.5	1.1
10/8/2014 10:37	5320	15.32	4.29	0.4	57.7	1.2	59.1	1.0
10/8/2014 10:38	5321	14.78	4.65	0.1	47.2	-0.6	46.9	1.0
10/8/2014 10:39	5322	15.54	4.19	0.1	61.6	-0.8	61.0	0.9
10/8/2014 10:40	5323	16.05	3.81	0.0	42.8	0.3	43.3	1.0
10/8/2014 10:41	5324	15.32	4.10	0.0	40.3	-2.4	38.0	1.0
10/8/2014 10:42	5325	15.22	4.19	-0.1	39.5	1.0	40.7	1.0
10/8/2014 10:43	5326	15.85	3.94	-0.2	45.1	-2.6	42.6	1.0
10/8/2014 10:44	5327	15.82	3.89	-0.1	39.9	-1.8	38.4	1.0
10/8/2014 10:45	5328	15.29	4.28	-0.2	32.7	0.8	33.7	1.0
10/8/2014 10:46	5329	15.66	4.05	-0.2	37.2	2.2	39.6	1.0
10/8/2014 10:47	5330	15.53	4.13	-0.2	38.4	0.7	39.3	0.7
10/8/2014 10:48	5331	15.05	4.41	-0.3	50.7	0.9	51.8	0.7
10/8/2014 10:49	5332	15.08	4.36	-0.2	47.3	0.6	48.2	0.8
10/8/2014 10:50	5333	15.64	3.89	-0.3	43.6	0.8	44.6	0.8
10/8/2014 10:51	5334	15.31	4.08	-0.2	42.9	0.6	43.7	0.8
10/8/2014 10:52	5335	15.26	4.23	-0.2	39.5	0.8	40.6	0.8
10/8/2014 10:53	5336	15.39	4.19	-0.3	37.5	0.9	38.6	0.7
10/8/2014 10:54	5337	15.77	3.90	-0.3	37.9	0.6	38.7	0.8
10/8/2014 10:55	5338	15.73	3.91	-0.4	36.5	0.7	37.4	0.9
10/8/2014 10:56	5339	16.24	3.62	-0.4	21.7	0.8	22.7	1.0
10/8/2014 10:57	5340	16.40	3.52	-0.4	20.4	0.2	20.9	0.9
10/8/2014 10:58	5341	16.84	3.19	-0.4	22.2	0.5	22.9	0.8
10/8/2014 10:59	5342	16.68	3.08	-0.4	22.8	0.5	23.5	0.8
10/8/2014 11:00	5343	16.59	3.25	-0.4	23.7	0.3	24.2	0.7
10/8/2014 11:01	5344	16.66	3.30	-0.4	24.2	0.6	25.0	0.7
10/8/2014 11:02	5345	17.12	3.01	-0.3	26.1	0.3	26.6	0.7
10/8/2014 11:03	5346	16.71	3.24	-0.4	27.3	0.5	28.0	0.7
10/8/2014 11:04	5347	16.73	3.27	-0.4	26.6	0.5	27.3	0.7
10/8/2014 11:05	5348	16.88	3.21	-0.4	29.2	0.2	29.7	0.6

SMM - Pogo Mine

10/8/2014

Timestamp	Record	O2	CO2	SO2	NO	NO2	NOx	CO
	Number	(%)	(%)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
10/8/2014 11:06	5349	15.98	3.81	-0.4	29.3	1.2	30.8	0.7
10/8/2014 11:07	5350	15.56	4.00	-0.3	20.6	0.3	21.1	0.7
10/8/2014 11:08	5351	16.52	3.21	-0.4	21.0	-0.2	21.1	0.6
10/8/2014 11:09	5352	17.20	2.83	-0.4	28.0	0.7	29.0	0.6
10/8/2014 11:10	5353	16.78	3.21	-0.4	29.3	0.4	29.9	0.7
10/8/2014 11:11	5354	16.65	3.35	-0.4	29.6	0.7	30.5	0.6
10/8/2014 11:12	5355	16.11	3.74	-0.4	32.4	0.3	32.9	0.6
10/8/2014 11:13	5356	16.28	3.50	-0.4	24.8	0.5	25.6	0.7
10/8/2014 11:14	5357	15.23	4.39	-0.4	31.8	-5.3	26.7	42.0
10/8/2014 11:15	5358	15.95	3.84	-0.3	51.4	-2.0	49.5	2.9
10/8/2014 11:16	5359	15.53	4.02	-0.4	53.6	1.1	54.9	1.2
10/8/2014 11:17	5360	15.28	4.14	-0.4	60.9	1.1	62.2	1.5
10/8/2014 11:18	5361	14.94	4.50	-0.3	66.7	1.6	68.5	1.4
10/8/2014 11:19	5362	14.58	4.78	-0.3	69.7	1.6	71.5	1.2
10/8/2014 11:20	5363	14.22	5.00	-0.4	74.4	1.3	75.9	1.0
10/8/2014 11:21	5364	14.17	5.02	-0.4	74.6	-0.1	74.7	1.0
10/8/2014 11:22	5365	13.87	5.20	-0.3	68.0	1.8	70.0	1.0
10/8/2014 11:23	5366	13.78	5.26	-0.4	75.5	1.3	77.0	1.0
10/8/2014 11:24	5367	13.81	5.22	-0.4	71.8	1.3	73.2	1.1
10/8/2014 11:25	5368	13.77	5.11	-0.4	79.2	2.4	81.8	1.0
10/8/2014 11:26	5369	13.90	5.02	-0.3	79.4	1.5	81.0	0.9
10/8/2014 11:27	5370	14.07	5.06	-0.3	76.5	1.2	78.0	0.9
10/8/2014 11:28	5371	13.63	5.36	-0.3	72.5	1.5	74.1	1.0
10/8/2014 11:29	5372	13.16	5.88	-0.3	67.7	5.4	73.4	1.8
10/8/2014 11:30	5373	13.32	5.83	-0.3	68.2	0.1	68.5	1.6
10/8/2014 11:31	5374	13.94	5.43	-0.3	68.2	1.4	69.9	1.5
10/8/2014 11:32	5375	13.81	5.42	-0.3	64.1	2.3	66.6	1.4
10/8/2014 11:33	5376	13.85	5.39	-0.3	60.0	2.2	62.4	1.3
10/8/2014 11:34	5377	13.96	5.18	-0.2	54.0	2.1	56.3	1.3
10/8/2014 11:35	5378	14.14	4.97	-0.2	50.8	0.3	51.3	1.4
10/8/2014 11:36	5379	14.42	4.95	-0.2	49.3	0.7	50.3	1.3
10/8/2014 11:37	5380	14.67	4.87	-0.2	61.8	7.8	69.7	1.1
10/8/2014 11:38	5381	14.35	5.07	-0.2	61.7	1.6	63.6	1.0
10/8/2014 11:39	5382	14.74	4.83	-0.2	64.6	1.7	66.5	1.0
10/8/2014 11:40	5383	14.87	4.62	-0.1	65.5	1.1	66.8	1.0
10/8/2014 11:41	5384	14.60	4.72	-0.1	62.3	2.6	65.1	1.1
10/8/2014 11:42	5385	14.78	4.55	-0.2	54.6	1.4	56.2	1.0
10/8/2014 11:43	5386	14.98	4.39	-0.2	45.2	1.8	47.2	1.1
10/8/2014 11:44	5387	15.47	4.04	-0.1	37.3	1.9	39.5	1.2
10/8/2014 11:45	5388	15.69	3.70	-0.1	32.2	1.4	33.7	1.4
10/8/2014 11:46	5389	14.88	4.18	-0.1	25.0	0.7	26.0	1.2
10/8/2014 11:47	5390	15.22	4.14	-0.1	34.3	0.3	34.8	1.5
10/8/2014 11:48	5391	15.91	3.71	-0.2	32.1	3.0	35.3	1.3

SMM - Pogo Mine

10/8/2014

Timestamp	Record	O2	CO2	SO2	NO	NO2	NOx	CO
	Number	(%)	(%)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
10/8/2014 11:49	5392	15.32	4.00	-0.1	25.5	1.3	27.0	1.2
10/8/2014 11:50	5393	15.26	4.10	-0.1	24.3	0.9	25.3	1.3
10/8/2014 11:51	5394	15.75	3.81	-0.2	26.1	-1.1	25.2	1.3
10/8/2014 11:52	5395	15.52	4.03	-0.1	28.1	1.9	30.3	1.9
10/8/2014 11:53	5396	15.73	3.83	-0.1	47.6	0.7	48.6	0.9
10/8/2014 11:54	5397	15.22	4.14	-0.1	49.0	1.3	50.6	1.4
10/8/2014 11:55	5398	14.93	4.22	-0.1	59.3	-0.1	59.4	1.5
10/8/2014 11:56	5399	14.48	4.53	-0.2	64.0	2.4	66.6	1.4
10/8/2014 11:57	5400	14.24	4.79	-0.1	69.3	2.3	71.9	1.3
10/8/2014 11:58	5401	13.97	4.99	-0.2	73.8	0.8	74.7	1.3
10/8/2014 11:59	5402	13.93	5.02	-0.1	76.1	2.3	78.6	1.3
10/8/2014 12:00	5403	14.08	4.93	-0.1	75.4	2.0	77.6	1.3
10/8/2014 12:01	5404	14.07	4.93	-0.2	76.0	1.4	77.6	1.3
10/8/2014 12:02	5405	14.07	4.93	-0.2	75.1	1.0	76.2	1.4
10/8/2014 12:03	5406	13.82	5.08	-0.1	75.9	0.5	76.5	1.2
10/8/2014 12:04	5407	13.72	5.11	-0.1	73.5	2.3	75.9	1.0
10/8/2014 12:05	5408	14.31	4.65	-0.1	66.5	1.5	68.3	1.1
10/8/2014 12:06	5409	13.75	4.93	-0.1	68.9	1.1	70.2	1.3
10/8/2014 12:07	5410	14.16	4.73	-0.1	72.8	-0.1	72.9	1.7
10/8/2014 12:08	5411	13.78	5.28	-0.1	50.3	4.5	55.1	3.1
10/8/2014 12:09	5412	14.56	4.86	-0.2	52.7	2.0	55.0	1.4
10/8/2014 12:10	5413	14.09	5.12	-0.1	63.9	2.2	66.3	1.6
10/8/2014 12:11	5414	13.97	5.16	-0.1	62.6	0.9	63.6	1.7
10/8/2014 12:12	5415	14.07	5.07	0.0	65.1	2.6	67.9	1.7
10/8/2014 12:13	5416	14.23	4.98	-0.1	65.8	1.6	67.6	1.4
10/8/2014 12:14	5417	14.86	4.54	-0.1	68.7	0.8	69.7	1.2
10/8/2014 12:15	5418	15.15	4.28	-0.1	54.2	2.1	56.5	1.2
10/8/2014 12:16	5419	14.29	4.71	0.0	48.4	0.0	48.7	1.4
10/8/2014 12:17	5420	14.67	4.41	-0.1	44.9	1.1	46.2	2.3
10/8/2014 12:18	5421	15.65	3.71	-0.1	53.4	2.4	56.1	1.4
10/8/2014 12:19	5422	14.80	4.23	-0.1	47.6	0.5	48.3	1.2
10/8/2014 12:20	5423	14.75	4.43	-0.1	45.0	2.5	47.8	1.3
10/8/2014 12:21	5424	15.67	3.88	-0.1	52.2	-0.6	51.8	1.2
10/8/2014 12:22	5425	15.21	4.07	-0.1	42.2	2.0	44.5	1.1
10/8/2014 12:23	5426	14.90	4.35	0.0	37.6	3.4	41.2	1.3
10/8/2014 12:24	5427	15.71	3.86	0.0	46.6	-0.9	45.9	1.2
10/8/2014 12:25	5428	15.20	4.31	0.0	31.0	3.5	34.7	0.9
10/8/2014 12:26	5429	15.74	3.97	-0.1	58.8	2.2	61.3	0.9
10/8/2014 12:27	5430	15.29	4.25	-0.1	62.2	0.6	63.0	1.1
10/8/2014 12:28	5431	15.20	4.36	0.0	61.9	2.3	64.4	1.1
10/8/2014 12:29	5432	15.27	4.16	-0.1	67.1	1.2	68.5	0.9
10/8/2014 12:30	5433	14.99	4.33	0.0	74.1	0.7	75.0	0.8
10/8/2014 12:31	5434	14.89	4.38	-0.1	86.3	2.1	88.6	0.8

SMM - Pogo Mine

10/8/2014

Timestamp	Record	O2	CO2	SO2	NO	NO2	NOx	CO
	Number	(%)	(%)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
10/8/2014 12:32	5435	14.95	4.42	-0.1	91.9	1.6	93.7	0.8
10/8/2014 12:33	5436	14.99	4.47	0.0	94.5	1.5	96.0	0.8
10/8/2014 12:34	5437	14.96	4.48	0.0	96.6	2.2	99.0	0.9
10/8/2014 12:35	5438	14.98	4.46	0.0	95.5	2.3	98.0	0.8
10/8/2014 12:36	5439	15.16	4.33	0.0	89.2	2.5	91.8	0.8
10/8/2014 12:37	5440	15.38	4.17	0.0	81.3	2.5	84.0	0.8
10/8/2014 12:38	5441	15.41	4.16	0.0	74.1	1.8	76.1	0.7
10/8/2014 12:39	5442	15.37	4.20	0.1	67.8	2.1	70.1	0.7
10/8/2014 12:40	5443	15.37	4.19	0.1	62.2	1.6	64.0	0.8
10/8/2014 12:41	5444	15.37	4.13	0.0	46.9	1.6	48.7	0.8
10/8/2014 12:42	5445	15.68	3.89	0.0	79.6	2.4	82.1	0.8
10/8/2014 12:43	5446	15.68	3.85	0.0	85.1	4.2	89.5	0.8
10/8/2014 12:44	5447	15.23	4.25	-0.1	80.9	0.4	81.4	0.8
10/8/2014 12:45	5448	15.83	3.90	-0.1	102.4	-8.0	93.1	0.8
10/8/2014 12:46	5449	15.03	4.49	0.0	100.3	-1.5	98.8	0.8
10/8/2014 12:47	5450	15.56	4.13	0.0	108.5	0.2	108.7	0.8
10/8/2014 12:48	5451	14.81	4.62	0.0	118.0	-0.2	117.8	0.8
10/8/2014 12:49	5452	15.22	4.35	0.0	113.2	2.0	115.3	0.8
10/8/2014 12:50	5453	15.04	4.37	0.1	111.3	3.0	114.4	0.9
10/8/2014 12:51	5454	14.54	4.74	0.1	119.9	2.6	122.7	0.9
10/8/2014 12:52	5455	15.05	4.42	0.1	120.5	5.1	125.8	1.0
10/8/2014 12:53	5456	14.62	4.64	0.1	122.3	0.6	122.9	1.3
10/8/2014 12:54	5457	14.58	4.60	0.1	116.7	2.7	119.5	1.2
10/8/2014 12:55	5458	15.03	4.26	0.1	111.8	1.9	113.8	1.2
10/8/2014 12:56	5459	14.76	4.31	0.2	112.3	1.7	114.1	1.1
10/8/2014 12:57	5460	14.53	4.56	0.1	107.6	1.9	109.5	1.1
10/8/2014 12:58	5461	14.78	4.52	0.2	101.1	2.6	103.8	1.0
10/8/2014 12:59	5462	15.13	4.27	0.2	99.4	3.1	102.7	1.0
10/8/2014 13:00	5463	14.72	4.54	0.2	97.4	0.8	98.3	1.0
10/8/2014 13:01	5464	14.79	4.48	0.2	85.2	0.5	85.8	1.1
10/8/2014 13:02	5465	14.90	4.51	0.2	86.8	2.8	89.7	0.9
10/8/2014 13:03	5466	15.32	4.27	0.2	83.9	3.7	87.8	1.2
10/8/2014 13:04	5467	14.75	4.59	0.1	75.2	5.2	80.5	1.5
10/8/2014 13:05	5468	15.16	4.41	0.2	91.5	2.1	93.8	1.1
10/8/2014 13:06	5469	14.92	4.49	0.2	93.5	0.8	94.4	1.1
10/8/2014 13:07	5470	14.78	4.56	0.1	94.3	2.2	96.6	1.0
10/8/2014 13:08	5471	15.14	4.20	0.2	94.6	3.1	97.9	1.1
10/8/2014 13:09	5472	14.58	4.56	0.2	100.6	3.1	103.8	1.3
10/8/2014 13:10	5473	14.48	4.73	0.2	113.6	-0.1	113.7	1.3
10/8/2014 13:11	5474	14.82	4.58	0.2	114.1	3.0	117.2	1.3
10/8/2014 13:12	5475	14.47	4.84	0.2	116.4	3.8	120.4	1.2
10/8/2014 13:13	5476	14.33	4.91	0.2	122.5	2.2	124.8	1.3
10/8/2014 13:14	5477	14.10	5.05	0.3	125.0	2.4	127.6	1.4

SMM - Pogo Mine

10/8/2014

Timestamp	Record	O2	CO2	SO2	NO	NO2	NOx	CO
	Number	(%)	(%)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
10/8/2014 13:15	5478	14.09	5.09	0.2	128.6	2.1	130.9	1.5
10/8/2014 13:16	5479	13.91	5.24	0.2	127.5	2.0	129.6	1.6
10/8/2014 13:17	5480	13.94	5.20	0.2	127.6	3.9	131.7	1.6
10/8/2014 13:18	5481	13.98	5.20	0.3	123.7	3.5	127.3	1.8
10/8/2014 13:19	5482	14.00	5.13	0.2	121.9	3.4	125.5	1.9
10/8/2014 13:20	5483	13.72	5.16	0.3	119.5	4.3	123.9	2.1
10/8/2014 13:21	5484	14.28	4.81	0.2	112.0	2.1	114.2	1.8
10/8/2014 13:22	5485	13.77	5.24	0.2	115.0	4.6	119.7	1.7
10/8/2014 13:23	5486	13.38	5.18	0.9	110.3	4.3	114.7	1.9
10/8/2014 13:24	5487	9.77	9.78	0.6	70.2	-0.2	63.4	2.4
10/8/2014 13:25	5488	9.90	9.92	0.2	0.3	0.3	0.6	0.2
10/8/2014 13:26	5489	9.90	9.93	0.2	0.1	0.2	0.3	0.2
10/8/2014 13:27	5490	3.62	3.45	66.4	2.9	7.4	10.5	33.0
10/8/2014 13:28	5491	0.08	0.16	90.5	85.4	2.3	87.8	90.3
10/8/2014 13:29	5492	0.07	0.13	91.1	91.0	-0.1	90.9	91.0
10/8/2014 13:30	5493	0.07	0.07	51.0	78.3	7.0	85.4	66.8
10/8/2014 13:31	5494	0.06	-0.06	49.2	48.9	0.1	49.1	48.1
10/8/2014 13:32	5495	0.60	0.12	51.4	48.8	0.1	49.1	47.7
10/8/2014 13:33	5496	15.24	4.05	4.8	51.2	1.2	52.6	11.5
10/8/2014 13:34	5497	15.58	4.06	1.1	51.9	1.5	53.6	0.9
10/8/2014 13:35	5498	16.01	3.82	0.6	49.3	0.1	49.7	0.9
10/8/2014 13:36	5499	16.06	3.72	0.4	45.2	2.0	47.4	1.0
10/8/2014 13:37	5500	15.83	3.91	0.4	43.0	1.2	44.5	1.0
10/8/2014 13:38	5501	15.62	4.06	0.3	39.7	0.1	40.0	1.0
10/8/2014 13:39	5502	16.43	3.49	0.3	47.0	0.4	47.7	1.0
10/8/2014 13:40	5503	16.01	3.77	0.2	38.3	1.1	39.7	1.1
10/8/2014 13:41	5504	15.85	3.79	0.2	31.5	0.5	32.2	1.2
10/8/2014 13:42	5505	16.03	3.59	0.1	31.8	0.0	31.9	1.2
10/8/2014 13:43	5506	16.59	3.28	0.1	26.2	0.8	27.1	1.4
10/8/2014 13:44	5507	16.21	3.58	0.1	22.4	1.7	24.3	1.3
10/8/2014 13:45	5508	16.22	3.63	0.1	18.7	0.4	19.3	1.2
10/8/2014 13:46	5509	16.37	3.52	0.1	16.9	0.9	18.0	1.1
10/8/2014 13:47	5510	16.57	3.42	0.1	16.4	0.9	17.5	0.9
10/8/2014 13:48	5511	16.67	3.29	0.0	16.7	0.5	17.3	1.1
10/8/2014 13:49	5512	16.42	3.48	0.0	16.2	0.3	16.6	1.0
10/8/2014 13:50	5513	16.49	3.43	0.0	16.9	0.9	18.1	0.9
10/8/2014 13:51	5514	17.00	3.01	0.0	17.9	1.0	19.1	0.9
10/8/2014 13:52	5515	16.55	3.16	0.0	18.4	0.8	19.4	0.9
10/8/2014 13:53	5516	16.57	3.18	0.0	18.2	0.3	18.7	0.8
10/8/2014 13:54	5517	17.00	3.03	-0.1	19.9	0.5	20.6	0.7
10/8/2014 13:55	5518	16.77	3.17	-0.1	20.1	0.5	20.8	0.8
10/8/2014 13:56	5519	16.68	3.26	0.0	20.0	0.7	21.0	0.7
10/8/2014 13:57	5520	16.87	3.16	0.0	21.1	0.5	21.9	0.7

SMM - Pogo Mine

10/8/2014

Timestamp	Record	O2	CO2	SO2	NO	NO2	NOx	CO
	Number	(%)	(%)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
10/8/2014 13:58	5521	17.08	2.94	0.0	22.1	0.0	22.3	0.7
10/8/2014 13:59	5522	16.79	3.17	-0.1	21.9	0.2	22.3	0.7
10/8/2014 14:00	5523	16.87	3.13	-0.1	22.0	0.7	23.0	0.6
10/8/2014 14:01	5524	17.22	2.83	0.0	23.2	0.1	23.4	0.7
10/8/2014 14:02	5525	16.85	3.00	0.0	23.0	0.0	23.2	0.7
10/8/2014 14:03	5526	16.89	2.90	-0.1	22.6	0.9	23.8	0.7
10/8/2014 14:04	5527	17.30	2.66	0.0	23.7	0.6	24.5	0.7
10/8/2014 14:05	5528	16.82	3.14	0.0	23.6	0.0	23.8	0.7
10/8/2014 14:06	5529	15.40	4.48	0.0	26.3	2.5	29.0	1.7
10/8/2014 14:07	5530	15.06	4.65	0.0	46.6	4.2	51.0	10.7
10/8/2014 14:08	5531	16.10	3.86	0.1	53.1	2.1	55.5	17.8
10/8/2014 14:09	5532	15.60	4.25	0.1	62.0	1.2	63.4	6.7
10/8/2014 14:10	5533	15.51	4.26	0.1	64.9	3.7	68.8	6.7
10/8/2014 14:11	5534	15.57	4.20	0.0	47.0	3.0	50.2	6.3
10/8/2014 14:12	5535	15.84	3.97	0.0	41.4	1.0	42.7	5.1
10/8/2014 14:13	5536	16.01	3.72	0.0	34.1	3.6	37.9	3.7
10/8/2014 14:14	5537	15.87	3.74	-0.1	35.9	2.0	38.1	3.7
10/8/2014 14:15	5538	15.86	3.88	0.0	30.1	0.6	30.9	3.1
10/8/2014 14:16	5539	16.02	3.82	0.0	23.2	2.2	25.6	2.2
10/8/2014 14:17	5540	16.19	3.70	0.0	20.5	0.8	21.6	2.0
10/8/2014 14:18	5541	16.67	3.40	-0.1	18.8	1.5	20.5	1.8
10/8/2014 14:19	5542	16.40	3.53	-0.1	18.9	1.0	20.2	1.6
10/8/2014 14:20	5543	16.21	3.70	-0.1	18.8	0.0	19.0	1.4
10/8/2014 14:21	5544	16.27	3.65	0.0	18.1	1.0	19.3	1.4
10/8/2014 14:22	5545	16.81	3.27	-0.1	18.2	1.1	19.6	1.3
10/8/2014 14:23	5546	16.35	3.45	-0.1	18.1	0.5	18.9	1.1
10/8/2014 14:24	5547	16.16	3.52	-0.1	17.2	0.8	18.2	1.2
10/8/2014 14:25	5548	15.96	3.86	-0.1	29.1	0.9	30.2	1.1
10/8/2014 14:26	5549	16.05	3.95	0.0	50.5	1.7	52.3	1.1
10/8/2014 14:27	5550	15.94	3.99	-0.1	56.7	0.5	57.4	0.9
10/8/2014 14:28	5551	16.38	3.60	0.0	56.9	2.0	59.0	1.0
10/8/2014 14:29	5552	16.00	3.83	0.0	52.8	1.4	54.4	1.2
10/8/2014 14:30	5553	15.93	3.79	-0.1	41.0	1.7	42.9	1.5
10/8/2014 14:31	5554	16.00	3.78	0.0	38.5	1.0	39.8	1.3
10/8/2014 14:32	5555	16.44	3.50	0.0	41.5	1.8	43.6	1.1
10/8/2014 14:33	5556	15.76	3.85	0.0	45.3	1.7	47.1	1.1
10/8/2014 14:34	5557	15.67	3.85	0.0	43.9	2.3	46.4	1.3
10/8/2014 14:35	5558	16.26	3.37	-0.1	48.5	0.1	48.9	1.3
10/8/2014 14:36	5559	16.13	3.40	0.0	41.2	-1.5	39.9	1.2
10/8/2014 14:37	5560	15.72	3.85	0.0	36.0	1.3	37.5	1.2
10/8/2014 14:38	5561	15.85	3.81	-0.1	39.6	1.5	41.3	1.2
10/8/2014 14:39	5562	16.51	3.35	-0.1	41.3	1.2	42.7	1.1
10/8/2014 14:40	5563	15.83	3.79	0.0	30.4	2.5	33.1	1.2

SMM - Pogo Mine

10/8/2014

Timestamp	Record	O2	CO2	SO2	NO	NO2	NOx	CO
	Number	(%)	(%)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
10/8/2014 14:41	5564	15.73	3.88	0.0	28.0	0.1	28.3	1.2
10/8/2014 14:42	5565	16.41	3.35	-0.1	38.0	0.5	38.8	1.1
10/8/2014 14:43	5566	15.92	3.60	0.0	29.9	1.8	31.9	1.0
10/8/2014 14:44	5567	15.73	3.79	0.0	29.9	2.9	33.0	1.1
10/8/2014 14:45	5568	15.83	3.69	0.0	42.8	0.0	43.0	0.8
10/8/2014 14:46	5569	15.89	3.57	0.0	41.7	2.3	44.2	0.9
10/8/2014 14:47	5570	15.28	4.24	0.0	37.3	-4.3	33.0	1.1
10/8/2014 14:48	5571	16.49	3.24	0.1	70.3	3.1	73.6	1.5
10/8/2014 14:49	5572	15.40	4.14	0.1	64.2	1.4	65.8	1.7
10/8/2014 14:50	5573	15.54	4.05	0.1	72.1	4.1	76.4	1.8
10/8/2014 14:51	5574	15.62	4.00	0.0	74.6	3.5	78.3	1.5
10/8/2014 14:52	5575	15.20	4.23	0.0	75.6	1.2	77.0	1.6
10/8/2014 14:53	5576	15.00	4.40	0.0	71.4	3.1	74.7	1.7
10/8/2014 14:54	5577	14.99	4.41	0.0	66.1	2.5	68.8	1.5
10/8/2014 14:55	5578	14.91	4.50	0.1	77.1	1.8	79.0	1.1
10/8/2014 14:56	5579	15.57	4.05	0.0	84.4	1.3	85.8	1.2
10/8/2014 14:57	5580	15.10	4.28	0.1	84.5	1.8	86.5	1.2
10/8/2014 14:58	5581	15.23	4.09	0.1	81.0	1.5	82.7	1.1
10/8/2014 14:59	5582	15.55	3.80	0.1	72.9	3.2	76.2	1.5
10/8/2014 15:00	5583	15.66	3.73	0.0	63.4	1.6	65.2	1.3
10/8/2014 15:01	5584	15.17	4.18	0.1	67.6	1.3	69.1	1.4
10/8/2014 15:02	5585	14.48	4.76	0.1	53.4	4.9	58.5	2.0
10/8/2014 15:03	5586	15.27	4.25	0.1	79.1	2.0	81.2	1.6
10/8/2014 15:04	5587	14.62	4.71	0.1	92.7	0.6	93.4	1.9
10/8/2014 15:05	5588	14.55	4.76	0.0	102.4	3.6	106.1	1.9
10/8/2014 15:06	5589	14.89	4.53	0.1	105.9	1.9	107.9	2.2
10/8/2014 15:07	5590	14.32	4.88	0.1	102.7	2.2	105.0	2.0
10/8/2014 15:08	5591	14.10	5.05	0.1	100.5	2.3	102.9	2.4
10/8/2014 15:09	5592	14.57	4.85	0.1	109.3	2.3	111.7	2.1
10/8/2014 15:10	5593	14.31	4.81	0.1	124.3	2.5	127.0	1.9
10/8/2014 15:11	5594	14.07	4.90	0.1	135.3	1.8	137.3	2.2
10/8/2014 15:12	5595	14.34	4.77	0.2	136.7	1.5	138.4	2.8
10/8/2014 15:13	5596	14.55	4.61	0.2	124.4	8.0	132.6	2.3
10/8/2014 15:14	5597	14.17	4.97	0.2	124.4	7.0	131.6	2.3
10/8/2014 15:15	5598	14.49	4.79	0.2	123.7	3.6	127.5	3.4
10/8/2014 15:16	5599	14.54	4.69	0.2	121.1	7.3	128.5	2.7
10/8/2014 15:17	5600	13.88	5.13	0.2	118.8	-4.0	114.0	2.9
10/8/2014 15:18	5601	14.07	5.04	0.2	97.8	0.5	97.6	1.7
10/8/2014 15:19	5602	13.63	5.34	0.2	96.8	2.9	99.8	1.6
10/8/2014 15:20	5603	13.56	5.36	0.3	100.6	1.5	102.2	1.7
10/8/2014 15:21	5604	13.44	5.47	0.3	104.1	2.4	106.6	1.8
10/8/2014 15:22	5605	13.61	5.24	0.3	110.1	3.0	113.3	1.6
10/8/2014 15:23	5606	13.82	4.96	0.3	109.6	1.3	111.0	2.0

SMM - Pogo Mine

10/8/2014

Timestamp	Record Number	O2 (%)	CO2 (%)	SO2 (ppm)	NO (ppm)	NO2 (ppm)	NOx (ppm)	CO (ppm)
10/8/2014 15:24	5607	13.99	4.84	0.3	113.3	4.0	117.4	2.1
10/8/2014 15:25	5608	14.21	4.77	0.4	114.1	2.4	116.7	2.1
10/8/2014 15:26	5609	13.78	5.15	0.3	112.5	3.3	115.9	2.0
10/8/2014 15:27	5610	14.41	4.77	0.3	114.8	2.4	117.3	2.0
10/8/2014 15:28	5611	13.82	5.14	0.4	109.5	6.7	116.4	1.7
10/8/2014 15:29	5612	14.30	4.87	0.4	109.4	3.8	113.4	1.6
10/8/2014 15:30	5613	14.30	4.79	0.4	109.5	4.4	114.0	1.3
10/8/2014 15:31	5614	14.11	4.93	0.4	104.5	4.8	109.4	1.4
10/8/2014 15:32	5615	14.66	4.62	0.4	98.0	2.5	100.6	1.5
10/8/2014 15:33	5616	14.76	4.47	0.4	90.8	4.3	95.3	1.4
10/8/2014 15:34	5617	13.78	5.21	0.4	86.4	3.2	89.7	7.0
10/8/2014 15:35	5618	14.26	4.86	0.4	81.6	7.5	89.3	5.2
10/8/2014 15:36	5619	14.24	4.75	0.4	88.6	0.3	89.0	2.9
10/8/2014 15:37	5620	14.66	4.48	0.4	92.2	2.0	94.3	2.2
10/8/2014 15:38	5621	14.55	4.63	0.5	94.6	2.3	97.0	1.7
10/8/2014 15:39	5622	14.65	4.64	0.4	93.3	2.1	95.5	1.9
10/8/2014 15:40	5623	14.66	4.66	0.5	95.5	-1.4	94.2	1.8
10/8/2014 15:41	5624	14.74	4.56	0.4	79.0	1.5	80.6	1.6
10/8/2014 15:42	5625	14.91	4.48	0.4	77.5	2.3	80.0	1.6
10/8/2014 15:43	5626	15.35	4.15	0.4	81.4	1.1	82.6	1.6
10/8/2014 15:44	5627	15.05	4.29	0.5	75.6	5.0	80.8	1.5
10/8/2014 15:45	5628	15.15	4.24	0.4	74.5	1.8	76.5	1.3
10/8/2014 15:46	5629	15.32	4.12	0.4	71.4	2.7	74.3	1.4
10/8/2014 15:47	5630	15.55	3.96	0.4	65.2	2.4	67.7	1.4
10/8/2014 15:48	5631	16.01	3.51	0.4	61.6	1.5	63.2	1.4
10/8/2014 15:49	5632	15.53	3.78	0.4	57.5	2.6	60.3	1.3
10/8/2014 15:50	5633	15.08	4.09	0.4	55.3	-1.6	53.9	1.5
10/8/2014 15:51	5634	15.68	3.85	0.4	85.4	-1.2	84.3	1.2
10/8/2014 15:52	5635	15.53	4.04	0.4	90.6	2.4	93.1	1.1
10/8/2014 15:53	5636	15.30	4.17	0.4	84.0	2.8	86.9	1.1
10/8/2014 15:54	5637	15.45	4.08	0.4	79.6	0.5	80.2	1.2
10/8/2014 15:55	5638	15.62	3.95	0.4	80.7	1.1	82.0	1.0
10/8/2014 15:56	5639	15.56	3.99	0.4	82.5	0.6	83.2	0.9
10/8/2014 15:57	5640	15.62	3.94	0.4	84.3	1.3	85.7	1.0
10/8/2014 15:58	5641	15.66	3.90	0.4	84.2	2.1	86.5	1.0
10/8/2014 15:59	5642	15.57	3.95	0.4	85.4	2.9	88.4	0.9
10/8/2014 16:00	5643	15.65	3.90	0.4	81.8	0.8	82.7	1.1
10/8/2014 16:01	5644	15.39	3.97	0.4	83.9	1.1	85.2	1.0
10/8/2014 16:02	5645	15.62	3.71	0.4	84.6	1.5	86.3	1.1
10/8/2014 16:03	5646	15.46	3.82	0.5	86.9	0.7	87.7	1.1
10/8/2014 16:04	5647	15.38	3.93	0.4	89.1	2.4	91.6	1.1
10/8/2014 16:05	5648	15.45	3.98	0.4	88.9	3.9	92.9	1.2
10/8/2014 16:06	5649	15.25	4.16	0.4	83.1	1.8	85.0	1.2

SMM - Pogo Mine

10/8/2014

Timestamp	Record	O2	CO2	SO2	NO	NO2	NOx	CO
	Number	(%)	(%)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
10/8/2014 16:07	5650	15.28	4.11	0.4	87.9	1.6	89.6	1.2
10/8/2014 16:08	5651	15.49	3.99	0.4	84.5	2.0	86.7	1.7
10/8/2014 16:09	5652	15.13	4.32	0.4	88.3	2.7	91.2	1.4
10/8/2014 16:10	5653	15.18	4.29	0.4	93.2	1.3	94.7	1.4
10/8/2014 16:11	5654	12.61	5.85	3.1	90.0	3.1	93.3	3.2
10/8/2014 16:12	5655	9.90	9.78	0.6	27.4	-2.0	21.2	1.1
10/8/2014 16:13	5656	9.90	9.77	0.5	0.2	0.2	0.4	0.2
10/8/2014 16:14	5657	9.59	9.20	11.7	0.1	0.1	0.3	0.8
10/8/2014 16:15	5658	0.24	-0.01	88.7	32.8	7.5	40.4	66.3
10/8/2014 16:16	5659	0.07	-0.10	90.9	90.5	-0.3	90.3	91.1
10/8/2014 16:17	5660	0.07	-0.01	91.4	90.7	-0.1	90.7	91.1
10/8/2014 16:18	5661	0.07	0.00	78.0	90.8	0.0	90.8	89.3
10/8/2014 16:19	5662	0.06	0.00	49.3	63.3	6.7	70.1	52.9
10/8/2014 16:20	5663	0.05	0.00	49.5	48.7	0.1	49.0	48.3
10/8/2014 16:21	5664	1.08	0.51	50.4	48.7	0.1	48.9	47.4
10/8/2014 16:22	5665	16.33	3.38	4.7	48.9	-0.1	49.0	9.9
10/8/2014 16:23	5666	16.17	3.61	1.4	44.1	-0.2	44.2	1.0
10/8/2014 16:24	5667	16.13	3.64	0.9	42.5	0.5	43.3	1.0
10/8/2014 16:25	5668	16.32	3.41	0.8	41.4	2.3	43.9	1.1
10/8/2014 16:26	5669	16.62	3.09	0.7	39.4	0.3	39.9	1.0
10/8/2014 16:27	5670	16.21	3.51	0.6	41.1	-2.0	39.3	0.9
10/8/2014 16:28	5671	16.20	3.60	0.5	38.0	-2.4	35.8	1.1
10/8/2014 16:29	5672	16.47	3.45	0.4	36.0	2.1	38.3	1.0
10/8/2014 16:30	5673	16.57	3.34	0.4	33.6	1.6	35.5	1.0
10/8/2014 16:31	5674	15.92	3.81	0.3	34.0	-0.7	33.5	0.9
10/8/2014 16:32	5675	16.09	3.70	0.3	38.8	-0.2	38.9	1.0
10/8/2014 16:33	5676	16.65	3.29	0.2	39.5	0.0	39.6	1.0
10/8/2014 16:34	5677	15.86	3.81	0.2	33.4	0.5	34.0	0.9
10/8/2014 16:35	5678	16.16	3.51	0.2	34.6	1.0	35.8	1.1
10/8/2014 16:36	5679	16.59	3.20	0.2	29.1	2.2	31.5	0.9
10/8/2014 16:37	5680	16.52	3.28	0.2	26.1	2.8	29.1	0.9
10/8/2014 16:38	5681	14.85	4.76	0.2	24.7	0.3	25.3	1.2
10/8/2014 16:39	5682	15.83	4.06	0.2	61.4	-0.7	61.0	2.0
10/8/2014 16:40	5683	15.60	4.23	0.2	65.9	2.2	68.3	2.5
10/8/2014 16:41	5684	15.31	4.43	0.2	84.4	0.4	84.9	3.0
10/8/2014 16:42	5685	15.32	4.39	0.2	97.1	2.6	99.8	3.4
10/8/2014 16:43	5686	15.23	4.44	0.2	99.3	4.7	104.2	3.1
10/8/2014 16:44	5687	14.75	4.69	0.1	97.6	3.4	101.1	2.5
10/8/2014 16:45	5688	14.56	4.71	0.1	94.1	3.6	97.9	2.5
10/8/2014 16:46	5689	14.87	4.43	0.1	89.3	3.1	92.6	3.1
10/8/2014 16:47	5690	15.28	4.28	0.1	82.9	1.0	84.1	2.2
10/8/2014 16:48	5691	14.97	4.50	0.2	82.0	1.1	83.3	1.9
10/8/2014 16:49	5692	14.94	4.55	0.1	75.7	1.4	77.3	1.6

SMM - Pogo Mine

10/8/2014

Timestamp	Record	O2	CO2	SO2	NO	NO2	NOx	CO
	Number	(%)	(%)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
10/8/2014 16:50	5693	14.94	4.55	0.1	75.1	2.2	77.4	1.6
10/8/2014 16:51	5694	15.48	4.23	0.2	72.6	3.2	75.9	1.4
10/8/2014 16:52	5695	15.22	4.36	0.1	74.4	2.8	77.3	1.2
10/8/2014 16:53	5696	15.69	4.06	0.2	70.5	1.6	72.4	1.1
10/8/2014 16:54	5697	16.13	3.66	0.1	62.5	2.2	64.9	1.1
10/8/2014 16:55	5698	15.52	3.97	0.1	69.9	-2.3	67.7	1.1
10/8/2014 16:56	5699	15.45	4.02	0.1	68.0	-1.1	67.1	1.3
10/8/2014 16:57	5700	15.81	3.96	0.2	57.1	3.2	60.5	1.3
10/8/2014 16:58	5701	16.08	3.72	0.2	56.9	1.8	59.0	1.1
10/8/2014 16:59	5702	15.61	4.08	0.2	58.4	1.0	59.6	1.1
10/8/2014 17:00	5703	15.27	4.36	0.1	59.0	2.9	62.1	1.4
10/8/2014 17:01	5704	15.95	3.95	0.1	71.4	2.0	73.7	1.4
10/8/2014 17:02	5705	15.62	4.10	0.2	71.7	1.8	73.6	1.4
10/8/2014 17:03	5706	15.54	4.15	0.2	72.4	4.0	76.6	1.4
10/8/2014 17:04	5707	15.59	3.99	0.1	69.8	1.0	71.0	1.2
10/8/2014 17:05	5708	15.89	3.78	0.1	66.3	2.3	68.8	1.3
10/8/2014 17:06	5709	16.04	3.75	0.1	62.4	1.8	64.4	1.2
10/8/2014 17:07	5710	15.51	4.18	0.0	58.1	2.5	60.8	1.2
10/8/2014 17:08	5711	15.70	4.02	0.0	68.6	-5.0	61.3	1.1
10/8/2014 17:09	5712	16.10	3.77	0.1	53.6	2.2	56.1	1.2
10/8/2014 17:10	5713	16.30	3.60	0.0	49.4	1.1	50.7	1.1
10/8/2014 17:11	5714	15.94	3.82	0.0	46.8	1.4	48.4	1.1
10/8/2014 17:12	5715	15.98	3.81	0.0	44.1	0.6	44.9	1.1
10/8/2014 17:13	5716	15.83	3.81	0.0	37.2	2.8	40.2	1.0
10/8/2014 17:14	5717	16.39	3.33	-0.1	44.9	3.9	49.0	0.9
10/8/2014 17:15	5718	15.69	3.86	0.0	40.6	1.6	42.5	1.0
10/8/2014 17:16	5719	15.92	3.81	-0.1	39.8	2.5	42.5	1.2
10/8/2014 17:17	5720	16.50	3.43	-0.1	41.7	0.1	42.0	1.1
10/8/2014 17:18	5721	15.99	3.71	0.0	38.9	-0.6	38.5	1.0
10/8/2014 17:19	5722	15.77	3.91	-0.1	35.0	0.7	35.9	1.2
10/8/2014 17:20	5723	16.14	3.67	-0.1	38.0	2.1	40.3	1.2
10/8/2014 17:21	5724	16.24	3.65	-0.1	31.5	0.1	31.8	0.9
10/8/2014 17:22	5725	16.53	3.42	-0.1	49.5	0.4	50.1	0.8
10/8/2014 17:23	5726	16.22	3.50	-0.1	38.1	1.1	39.4	0.8
10/8/2014 17:24	5727	16.21	3.43	-0.1	36.3	0.6	37.1	0.8
10/8/2014 17:25	5728	16.66	3.20	-0.1	33.5	1.4	35.1	0.8
10/8/2014 17:26	5729	16.09	3.70	-0.1	35.9	1.4	37.5	0.8
10/8/2014 17:27	5730	16.22	3.69	-0.1	39.4	1.4	41.1	0.8
10/8/2014 17:28	5731	16.42	3.52	-0.1	36.7	-1.3	35.6	0.9
10/8/2014 17:29	5732	15.08	4.36	-0.1	45.1	0.7	46.1	1.8
10/8/2014 17:30	5733	16.49	3.35	-0.1	57.2	3.6	61.1	1.4
10/8/2014 17:31	5734	16.47	3.36	-0.2	38.9	2.3	41.5	1.4
10/8/2014 17:32	5735	15.47	4.01	-0.1	43.4	2.7	46.4	1.1

SMM - Pogo Mine

10/8/2014

Timestamp	Record	O2	CO2	SO2	NO	NO2	NOx	CO
	Number	(%)	(%)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
10/8/2014 17:33	5736	16.21	3.49	-0.1	54.9	0.2	55.4	1.4
10/8/2014 17:34	5737	15.80	3.71	-0.1	36.8	-0.1	36.8	1.2
10/8/2014 17:35	5738	16.13	3.37	-0.1	57.1	2.6	60.0	1.0
10/8/2014 17:36	5739	15.82	3.72	-0.1	45.0	1.1	46.3	1.3
10/8/2014 17:37	5740	14.05	4.61	3.3	49.2	0.3	49.7	2.8
10/8/2014 17:38	5741	9.89	9.78	0.1	14.0	4.0	18.1	1.6
10/8/2014 17:39	5742	9.88	9.80	-0.1	0.1	0.1	0.2	0.2
10/8/2014 17:40	5743	6.70	6.41	38.3	0.2	-0.1	0.1	10.2
10/8/2014 17:41	5744	0.09	-0.01	89.6	59.2	9.5	68.8	84.7
10/8/2014 17:42	5745	0.07	-0.06	90.5	90.0	-0.2	89.8	90.9
10/8/2014 17:43	5746	0.07	-0.08	83.5	90.1	-0.1	90.1	90.3
10/8/2014 17:44	5747	0.06	-0.20	48.9	71.1	-0.5	70.7	56.6
10/8/2014 17:45	5748	0.06	-0.28	49.1	48.4	0.1	48.7	48.1
10/8/2014 17:46	5749	0.04	-0.23	48.9	48.3	0.1	48.6	48.1
10/8/2014 17:47	5750	0.04	-0.12	48.9	48.3	0.1	48.6	48.1
10/8/2014 17:48	5751	11.65	2.78	21.8	49.5	-0.7	49.0	24.7
10/8/2014 17:49	5752	16.23	3.43	1.5	51.8	0.2	52.2	1.6
10/8/2014 17:50	5753	16.20	3.41	0.7	51.5	1.4	53.1	1.5
10/8/2014 17:51	5754	15.99	3.59	0.4	51.0	0.1	51.3	1.5
10/8/2014 17:52	5755	15.98	3.63	0.3	48.2	1.1	49.6	1.4
10/8/2014 17:53	5756	16.03	3.58	0.1	47.8	-1.3	46.7	1.2
10/8/2014 17:54	5757	13.65	6.10	0.3	44.8	1.8	46.9	1.1
10/8/2014 17:55	5758	9.90	9.56	0.0	4.0	5.0	9.1	0.2
10/8/2014 17:56	5759	9.90	9.68	0.0	0.0	0.0	0.1	0.2
10/8/2014 17:57	5760	2.66	2.21	79.6	17.0	-2.7	11.9	41.4
10/8/2014 17:58	5761	0.05	-0.09	92.8	88.3	1.6	90.0	90.6
10/8/2014 17:59	5762	0.04	-0.10	92.8	90.6	-0.1	90.6	90.8
10/8/2014 18:00	5763	0.03	-0.10	55.6	81.8	3.3	85.2	68.8
10/8/2014 18:01	5764	0.03	-0.11	50.1	49.5	-0.6	49.0	48.1
10/8/2014 18:02	5765	4.74	4.74	33.0	48.6	0.1	48.8	44.3
10/8/2014 18:03	5766	20.91	20.24	0.6	18.0	1.5	19.6	4.7
10/8/2014 18:04	5767	20.92	20.36	0.4	0.0	0.0	0.1	-0.1
10/8/2014 18:05	5768	20.68	11.82	0.7	0.0	0.0	0.0	0.0
10/8/2014 18:06	5769	10.97	0.30	61.1	3.6	-0.6	0.1	NAN
10/8/2014 18:07	5770	0.06	-0.08	99.6	151.8	-1.2	136.0	NAN
10/8/2014 18:08	5771	0.06	-0.10	99.7	177.2	0.5	177.8	NAN
10/8/2014 18:09	5772	0.04	-0.10	99.7	180.9	0.3	181.3	NAN

Table 9
Continuous Emissions Measurements Result
Run 123-3
10/09/14

Table 9

Time (1-min)	NOx (ppm)	NOx (ppm Cor.) (lb/hr)	CO (ppm)	CO (ppm Cor.) (lb/hr)	SO2 (ppm)	SO2 (ppm Cor.) (lb/hr)	O2 (%)	O2 (% Cor.)	CO2 (%)	CO2 (% Cor.)			
830	19.4	19.3	0.23	1.0	0.7	0.01	-0.6	0.9	0.01	16.71	16.87	3.14	3.04
831	19.4	19.4	0.23	1.2	0.9	0.01	-0.7	0.8	0.01	16.89	17.05	3.08	2.98
832	24.5	24.4	0.29	1.5	1.2	0.01	-0.8	0.7	0.01	15.33	15.47	4.34	4.26
833	20.1	20.0	0.24	1.7	1.4	0.01	-0.9	0.6	0.01	15.25	15.39	4.39	4.31
834	20.0	19.9	0.23	1.5	1.3	0.01	-0.9	0.5	0.01	15.56	15.71	4.12	4.03
835	21.4	21.3	0.25	1.3	1.0	0.01	-0.9	0.5	0.01	16.35	16.51	3.55	3.46
836	22.9	22.8	0.27	1.3	1.0	0.01	-1.0	0.5	0.01	16.15	16.30	3.65	3.56
837	26.2	26.1	0.31	1.3	1.0	0.01	-1.0	0.4	0.01	15.78	15.93	3.87	3.78
838	29.4	29.4	0.35	1.2	0.9	0.01	-1.1	0.4	0.01	15.81	15.96	3.85	3.76
839	31.0	30.9	0.36	1.2	0.9	0.01	-1.2	0.3	0.00	15.91	16.06	3.69	3.60
840	31.0	30.9	0.36	1.1	0.8	0.01	-1.2	0.2	0.00	16.11	16.26	3.49	3.39
841	30.6	30.5	0.36	1.1	0.8	0.01	-1.2	0.2	0.00	16.32	16.48	3.30	3.20
842	31.8	31.7	0.37	1.1	0.8	0.01	-1.2	0.3	0.00	16.35	16.51	3.33	3.23
843	31.2	31.2	0.37	1.1	0.8	0.01	-1.2	0.2	0.00	16.35	16.51	3.40	3.31
844	32.7	32.6	0.38	1.1	0.8	0.01	-1.3	0.2	0.00	16.60	16.76	3.25	3.15
845	32.4	32.3	0.38	1.0	0.7	0.00	-1.3	0.2	0.00	16.16	16.31	3.59	3.49
846	32.4	32.3	0.38	1.0	0.7	0.00	-1.3	0.2	0.00	16.30	16.46	3.58	3.49
847	32.5	32.4	0.38	0.9	0.6	0.00	-1.3	0.1	0.00	16.47	16.63	3.46	3.36
848	33.2	33.1	0.39	0.9	0.7	0.00	-1.3	0.1	0.00	16.50	16.66	3.43	3.34
849	32.6	32.5	0.38	1.0	0.7	0.00	-1.3	0.2	0.00	16.45	16.61	3.41	3.32
850	32.8	32.7	0.38	1.0	0.7	0.01	-1.3	0.1	0.00	16.68	16.84	3.36	3.26
852	28.4	28.4	0.33	1.0	0.7	0.01	-1.3	0.1	0.00	15.38	15.52	4.24	4.15
853	22.2	22.1	0.26	1.8	1.5	0.01	-1.4	0.1	0.00	15.04	15.18	4.39	4.31
854	30.2	30.1	0.35	4.1	3.8	0.03	-1.4	0.1	0.00	14.99	15.13	4.41	4.32
855	50.2	50.1	0.59	1.9	1.6	0.01	-1.4	0.0	0.00	15.02	15.16	4.46	4.38
856	37.8	37.7	0.44	1.3	1.0	0.01	-1.4	0.1	0.00	15.09	15.23	4.49	4.41
857	30.6	30.5	0.36	1.9	1.6	0.01	-1.4	0.1	0.00	14.62	14.75	4.81	4.73
858	32.0	32.0	0.38	6.3	6.0	0.04	-1.4	0.0	0.00	14.14	14.27	5.11	5.03
859	40.9	40.8	0.48	13.5	13.3	0.10	-1.4	0.0	0.00	14.08	14.20	5.18	5.11
900	40.2	40.1	0.47	3.8	3.5	0.03	-1.5	0.1	0.00	14.15	14.28	5.18	5.10
901	36.5	36.4	0.43	2.4	2.2	0.02	-1.5	0.0	0.00	14.42	14.55	5.09	5.02
902	33.3	33.2	0.39	1.6	1.3	0.01	-1.5	-0.1	0.00	14.58	14.71	4.96	4.89
903	28.9	28.8	0.34	1.4	1.1	0.01	-1.5	-0.1	0.00	14.56	14.69	4.96	4.88
904	28.0	27.9	0.33	1.4	0.9	0.01	-1.5	-0.1	0.00	14.57	14.70	4.86	4.79
905	32.5	32.4	0.38	1.0	0.7	0.01	-1.6	-0.1	0.00	14.96	15.10	4.55	4.46
906	30.1	30.0	0.35	1.1	0.8	0.01	-1.6	-0.1	0.00	14.65	14.78	4.69	4.61
907	27.2	27.1	0.32	1.1	0.8	0.01	-1.6	-0.1	0.00	14.98	15.12	4.60	4.52
908	28.4	28.3	0.33	1.2	0.9	0.01	-1.6	-0.2	0.00	15.15	15.29	4.56	4.48
909	27.6	27.5	0.32	1.2	0.9	0.01	-1.6	-0.2	0.00	14.85	14.99	4.74	4.66
910	26.9	26.8	0.32	1.0	0.7	0.01	-1.6	-0.1	0.00	15.39	15.53	4.44	4.35
911	35.3	35.2	0.41	1.0	0.7	0.00	-1.6	-0.2	0.00	15.02	15.16	4.65	4.57
912	29.5	29.4	0.35	0.9	0.7	0.00	-1.6	-0.1	0.00	15.24	15.38	4.53	4.45
913	29.2	29.1	0.34	1.0	0.7	0.01	-1.6	-0.1	0.00	16.55	16.71	3.63	3.53
914	31.0	30.9	0.36	6.4	6.2	0.04	-1.6	-0.2	0.00	14.26	14.39	5.25	5.18
915	45.8	45.7	0.54	1.4	1.1	0.01	-1.7	-0.2	0.00	15.99	16.14	4.08	3.99
916	40.6	40.5	0.48	1.5	1.2	0.01	-1.6	-0.2	0.00	15.49	15.63	4.37	4.28
917	45.0	44.9	0.53	5.9	5.7	0.04	-1.6	-0.1	0.00	15.44	15.58	4.23	4.14
918	27.2	27.1	0.32	3.6	3.4	0.02	-1.7	-0.2	0.00	15.75	15.90	4.04	3.95
919	24.8	24.7	0.29	2.3	2.0	0.01	-1.7	-0.3	0.00	15.96	16.11	4.03	3.94
920	27.5	27.4	0.32	1.7	1.4	0.01	-1.7	-0.3	0.00	14.87	15.01	4.75	4.67
921	29.5	29.4	0.35	1.3	1.0	0.01	-1.7	-0.2	0.00	15.23	15.37	4.54	4.46
922	26.4	26.3	0.31	1.8	1.5	0.01	-1.7	-0.3	0.00	14.41	14.54	5.13	5.06
923	26.9	26.8	0.32	1.6	1.3	0.01	-1.8	-0.3	0.00	14.66	14.79	5.00	4.92
924	27.7	27.6	0.32	1.4	1.1	0.01	-1.9	-0.4	0.00	14.71	14.84	4.91	4.83
925	26.0	25.9	0.30	1.5	1.2	0.01	-1.8	-0.4	0.00	14.93	15.07	4.74	4.66
926	30.8	30.7	0.36	1.4	1.2	0.01	-1.8	-0.3	0.00	14.66	14.79	4.92	4.85
927	24.6	24.5	0.29	1.3	1.0	0.01	-1.8	-0.3	0.00	14.69	14.82	4.84	4.76
928	24.7	24.6	0.29	1.2	0.9	0.01	-1.8	-0.3	0.00	15.25	15.39	4.39	4.30
929	25.9	25.8	0.30	1.2	0.9	0.01	-1.8	-0.3	0.00	15.39	15.53	4.24	4.16
930	25.4	25.3	0.30	1.2	0.9	0.01	-1.7	-0.3	0.00	15.86	16.01	3.94	3.85
931	28.7	28.6	0.34	1.2	0.9	0.01	-1.8	-0.3	0.00	15.43	15.57	4.42	4.34
932	32.2	32.1	0.38	1.2	0.9	0.01	-1.8	-0.4	0.00	15.22	15.36	4.58	4.50
933	43.5	43.4	0.51	1.6	1.3	0.01	-1.8	-0.4	0.00	16.35	16.51	3.85	3.76
934	24.2	24.1	0.28	1.6	1.3	0.01	-1.8	-0.3	0.00	15.38	15.52	4.42	4.34
935	27.9	27.8	0.33	1.6	1.3	0.01	-1.8	-0.4	0.00	15.29	15.43	4.51	4.43
936	35.0	34.9	0.41	3.2	2.9	0.02	-1.8	-0.4	0.00	15.31	15.45	4.64	4.56
937	73.9	73.8	0.87	13.1	13.0	0.09	-1.8	-0.4	0.00	14.99	15.13	4.73	4.65
938	66.6	66.5	0.78	1.4	1.2	0.01	-1.9	-0.4	0.00	15.43	15.57	4.42	4.34
939	45.0	44.9	0.53	1.3	1.0	0.01	-1.9	-0.4	0.00	15.53	15.67	4.29	4.21
940	58.2	58.1	0.68	1.6	1.3	0.01	-1.9	-0.5	0.00	15.27	15.41	4.33	4.25
941	42.3	42.2	0.50	2.0	1.7	0.01	-1.9	-0.5	0.00	14.93	15.07	4.73	4.65
942	54.6	54.5	0.64	1.5	1.2	0.01	-2.0	-0.5	0.00	15.63	15.78	4.34	4.26
943	42.7	42.6	0.50	1.3	1.0	0.01	-1.9	-0.5	0.00	14.71	14.84	4.87	4.79
944	49.3	49.2	0.58	1.4	1.1	0.01	-1.9	-0.4	0.00	15.08	15.22	4.66	4.58
945	44.8	44.7	0.53	1.1	0.8	0.01	-2.0	-0.5	0.00	15.34	15.48	4.50	4.42
946	42.3	42.2	0.50	1.2	1.0	0.01	-2.0	-0.5	0.00	14.50	14.63	5.05	4.97
947	49.2	49.1	0.58	1.4	1.1	0.01	-1.9	-0.5	0.00	14.35	14.48	5.15	5.08
948	42.5	42.4	0.50	1.6	1.3	0.01	-1.9	-0.5	0.00	14.57	14.70	5.03	4.96
949	33.9	33.8	0.40	2.9	2.6	0.02	-2.0	-0.5	0.00	15.11	15.25	4.52	4.44
950	28.3	28.3	0.33	1.1	0.8	0.01	-1.9	-0.5	0.00	15.60	15.75	4.11	4.02
951	46.9	46.8	0.55	1.1	0.8	0.01	-1.9	-0.4	0.00	15.18	15.32	4.74	4.66
952	84.5	84.4	0.99	1.1	0.8	0.01	-1.9	-0.5	0.00	15.75	15.90	4.39	4.31
953	90.9	90.8	1.07	1.4	1.1	0.01	-1.9	-0.5	0.00	15.69	15.84	4.48	4.40
954	108.3	108.2	1.27	1.4	1.1	0.01	-1.9	-0.5	0.00	15.23	15.37	4.79	4.71
955	104.0	104.0	1.22	1.4	1.1	0.01	-1.9	-0.5	0.00	15.09	15.23	4.86	4.78
956	10												

Table 10
 Continuous Emissions Measurements Results
 Run IS-4
 10/09/14

Time (1-min)	NOx (ppm)	NOx (ppm Cor.)	NOx (lb/hr)	CO (ppm)	CO (ppm Cor.)	CO (lb/hr)	SO2 (ppm)	SO2 (ppm Cor.)	SO2 (lb/hr)	O2 (%)	O2 (% Cor.)	CO2 (%)	CO2 (% Cor.)
1116	32.5	32.8	0.30	0.8	0.6	0.00	-2.3	-0.2	0.00	16.49	16.70	3.52	3.36
1117	31.7	32.0	0.29	0.9	0.8	0.00	-2.4	-0.3	0.00	15.99	16.20	4.05	3.89
1118	57.8	58.5	0.53	1.0	0.8	0.00	-2.3	-0.2	0.00	15.86	16.06	4.19	4.04
1119	64.1	64.9	0.59	0.9	0.7	0.00	-2.3	-0.2	0.00	15.91	16.11	4.11	3.95
1120	70.6	71.5	0.65	1.0	0.8	0.00	-2.4	-0.2	0.00	16.04	16.25	3.93	3.77
1121	68.2	69.1	0.63	1.0	0.8	0.00	-2.4	-0.2	0.00	15.71	15.91	4.14	3.98
1122	64.7	65.4	0.59	0.9	0.8	0.00	-2.4	-0.2	0.00	15.79	15.99	4.08	3.92
1123	60.8	61.5	0.56	0.9	0.8	0.00	-2.4	-0.2	0.00	16.00	16.21	3.96	3.80
1124	55.5	56.1	0.51	1.0	0.8	0.00	-2.4	-0.3	0.00	16.25	16.46	3.63	3.47
1125	51.1	51.7	0.47	1.0	0.8	0.00	-2.3	-0.2	0.00	15.83	16.03	3.83	3.67
1126	46.7	47.2	0.43	1.0	0.8	0.00	-2.3	-0.1	0.00	15.45	15.65	4.11	3.96
1127	59.4	60.2	0.55	1.0	0.9	0.00	-2.4	-0.2	0.00	16.17	16.38	3.76	3.61
1128	44.3	44.8	0.41	1.1	0.9	0.01	-2.4	-0.2	0.00	16.03	16.24	3.82	3.66
1129	34.5	34.9	0.32	1.1	0.9	0.00	-2.4	-0.2	0.00	15.31	15.50	4.31	4.16
1130	48.8	49.4	0.45	1.1	0.9	0.00	-2.4	-0.3	0.00	15.67	15.87	4.08	3.93
1131	45.6	46.1	0.42	1.0	0.9	0.00	-2.3	-0.2	0.00	16.29	16.50	3.64	3.48
1132	35.5	35.9	0.33	1.1	0.9	0.00	-2.3	-0.2	0.00	15.36	15.55	4.24	4.09
1133	43.0	43.4	0.39	1.1	0.9	0.01	-2.4	-0.2	0.00	15.62	15.82	4.09	3.93
1134	43.8	44.3	0.40	1.0	0.8	0.00	-2.4	-0.2	0.00	16.15	16.36	3.76	3.60
1135	34.6	34.9	0.32	1.1	0.9	0.00	-2.4	-0.2	0.00	15.70	15.90	3.96	3.81
1136	45.7	46.3	0.42	8.9	9.0	0.05	-2.3	-0.2	0.00	15.00	15.19	4.73	4.58
1137	61.1	61.8	0.56	1.7	1.6	0.01	-2.3	-0.1	0.00	15.70	15.90	4.16	4.01
1138	68.5	69.3	0.63	1.3	1.1	0.01	-2.3	-0.1	0.00	15.98	16.19	4.03	3.88
1139	90.0	91.2	0.83	1.3	1.1	0.01	-2.3	-0.2	0.00	15.97	16.18	4.04	3.89
1140	79.3	80.3	0.73	1.2	1.1	0.01	-2.2	-0.1	0.00	16.08	16.29	3.95	3.79
1141	69.8	70.7	0.64	1.1	1.0	0.01	-2.3	-0.2	0.00	15.34	15.53	4.41	4.26
1142	73.5	74.4	0.68	1.2	1.0	0.01	-2.3	-0.2	0.00	16.36	16.57	3.79	3.63
1143	50.8	51.4	0.47	1.3	1.1	0.01	-2.3	-0.1	0.00	16.12	16.33	3.87	3.71
1144	41.9	42.4	0.39	1.3	1.1	0.01	-2.4	-0.2	0.00	15.80	16.00	4.13	3.98
1145	43.8	44.3	0.40	1.2	1.0	0.01	-2.4	-0.2	0.00	15.87	16.07	4.07	3.92
1146	38.3	38.7	0.35	1.2	1.0	0.01	-2.3	-0.2	0.00	15.98	16.19	3.92	3.77
1147	43.0	43.5	0.40	1.1	0.9	0.01	-2.3	-0.1	0.00	16.03	16.24	3.69	3.53
1148	40.0	40.4	0.37	1.1	0.9	0.01	-2.3	-0.2	0.00	15.46	15.66	4.21	4.06
1149	43.8	44.3	0.40	1.1	0.9	0.00	-2.3	-0.2	0.00	15.87	16.07	4.04	3.89
1150	40.3	40.7	0.37	1.1	0.9	0.00	-2.3	-0.2	0.00	16.26	16.47	3.73	3.57
1151	31.8	32.1	0.29	1.1	0.9	0.00	-2.3	-0.1	0.00	15.45	15.65	4.32	4.17
1152	49.5	50.1	0.46	0.9	0.7	0.00	-2.4	-0.2	0.00	15.32	15.51	4.41	4.26
1153	54.7	55.4	0.50	0.9	0.7	0.00	-2.4	-0.2	0.00	15.89	16.09	4.06	3.91
1154	39.4	39.9	0.36	1.0	0.8	0.00	-2.5	-0.3	0.00	15.53	15.73	4.34	4.19
1155	41.1	41.6	0.38	1.0	0.9	0.00	-2.4	-0.2	0.00	16.20	16.41	3.92	3.77
1156	35.9	36.3	0.33	1.0	0.8	0.00	-2.5	-0.3	0.00	16.01	16.22	3.89	3.73
1157	30.8	31.1	0.28	1.1	0.9	0.01	-2.4	-0.3	0.00	15.67	15.87	4.16	4.01
1158	41.1	41.6	0.38	0.9	0.8	0.00	-2.4	-0.2	0.00	15.77	15.97	4.27	4.11
1159	64.8	65.6	0.60	0.9	0.8	0.00	-2.4	-0.3	0.00	16.01	16.22	4.17	4.01
1200	60.4	61.1	0.56	1.1	0.9	0.01	-2.5	-0.3	0.00	15.94	16.15	4.13	3.98
1201	46.6	47.2	0.43	1.2	1.0	0.01	-2.4	-0.2	0.00	15.85	16.05	4.19	4.03
1202	40.2	40.7	0.37	1.1	0.9	0.01	-2.4	-0.2	0.00	15.67	15.87	4.32	4.17
1203	48.0	48.5	0.44	1.1	0.9	0.00	-2.4	-0.2	0.00	16.32	16.53	3.84	3.68
1204	38.1	38.5	0.35	1.1	0.9	0.01	-2.5	-0.3	0.00	15.92	16.12	4.12	3.96
1205	32.7	33.0	0.30	1.1	0.9	0.01	-2.5	-0.3	0.00	15.55	15.75	4.35	4.19
1206	40.2	40.6	0.37	1.1	0.9	0.01	-2.5	-0.3	0.00	15.99	16.20	4.06	3.90
1207	38.8	39.2	0.36	1.0	0.8	0.00	-2.5	-0.4	0.00	16.07	16.28	3.78	3.62
1208	32.6	32.9	0.30	1.1	1.0	0.01	-2.5	-0.4	0.00	15.44	15.64	4.19	4.03
1209	38.1	38.5	0.35	1.2	1.0	0.01	-2.5	-0.4	0.00	15.75	15.95	4.12	3.97
1210	38.2	38.6	0.35	1.1	0.9	0.01	-2.5	-0.3	0.00	16.41	16.62	3.72	3.56
1211	30.5	30.8	0.28	1.1	0.9	0.00	-2.5	-0.3	0.00	15.39	15.59	4.38	4.23
1212	37.1	37.5	0.34	1.0	0.9	0.00	-2.5	-0.3	0.00	15.70	15.90	4.20	4.05
1213	28.9	29.2	0.27	1.1	1.0	0.01	-2.5	-0.3	0.00	16.09	16.30	4.03	3.88
1214	33.7	34.1	0.31	3.5	3.4	0.02	-2.5	-0.4	0.00	16.05	16.26	4.08	3.93
1215	34.3	34.7	0.32	0.9	0.7	0.00	-2.5	-0.3	0.00	15.90	16.10	4.19	4.03
Ave	47.2	47.7	0.43	1.2	1.1	0.01	-2.4	-0.2	0.00	15.86	16.06	4.05	3.90

SMM - Pogo Mine

10/9/2014

Timestamp	Record Number	O2 (%)	CO2 (%)	SO2 (ppm)	NO (ppm)	NO2 (ppm)	NOx (ppm)	CO (ppm)
10/9/2014 7:49	6592	20.78	19.76	1.4	0.0	0.0	0.0	0.2
10/9/2014 7:50	6593	21.05	19.90	1.6	-0.1	-0.1	-0.1	0.1
10/9/2014 7:51	6594	21.13	20.72	1.8	-0.1	-0.1	-0.1	0.2
10/9/2014 7:52	6595	21.13	20.72	0.7	-0.1	-0.1	-0.1	0.1
10/9/2014 7:53	6596	21.13	20.72	-0.4	-0.1	-0.1	-0.1	0.2
10/9/2014 7:54	6597	5.60	4.48	89.6	27.5	-0.9	21.0	NAN
10/9/2014 7:55	6598	0.13	-0.25	99.5	184.5	3.7	188.2	NAN
10/9/2014 7:56	6599	0.12	-0.27	98.8	181.5	-0.2	181.4	NAN
10/9/2014 7:57	6600	0.11	-0.03	91.9	146.9	-2.1	138.1	NAN
10/9/2014 7:58	6601	0.09	0.01	92.1	92.5	1.2	93.8	91.6
10/9/2014 7:59	6602	0.39	0.62	79.2	93.1	0.7	93.9	90.2
10/9/2014 8:00	6603	20.70	21.29	0.4	63.4	-2.7	52.4	22.8
10/9/2014 8:01	6604	21.07	20.92	-0.1	0.1	0.1	0.3	0.1
10/9/2014 8:02	6605	21.08	20.75	-0.2	0.0	0.0	0.1	0.1
10/9/2014 8:03	6606	14.68	13.79	46.0	0.0	0.0	0.0	NAN
10/9/2014 8:04	6607	0.11	0.11	99.5	109.4	24.6	134.1	NAN
10/9/2014 8:05	6608	0.10	0.11	99.5	179.1	0.0	179.3	NAN
10/9/2014 8:06	6609	0.09	0.15	95.7	179.2	0.3	179.6	NAN
10/9/2014 8:07	6610	0.07	0.17	90.8	122.8	-1.7	111.4	NAN
10/9/2014 8:08	6611	0.07	0.19	91.1	92.3	0.8	93.3	90.1
10/9/2014 8:09	6612	0.52	0.92	76.3	92.7	0.5	93.3	89.4
10/9/2014 8:10	6613	9.90	10.10	0.4	53.7	0.4	51.9	18.7
10/9/2014 8:11	6614	9.95	9.94	-0.1	0.2	0.1	0.3	0.3
10/9/2014 8:12	6615	7.31	4.74	27.3	0.7	-0.4	0.1	9.0
10/9/2014 8:13	6616	0.07	0.20	49.1	42.9	-2.6	39.2	46.4
10/9/2014 8:14	6617	0.06	0.19	49.1	49.7	0.3	50.1	49.6
10/9/2014 8:15	6618	0.08	0.19	48.6	49.7	0.3	50.2	50.2
10/9/2014 8:16	6619	4.84	0.60	31.7	19.9	7.8	27.9	40.2
10/9/2014 8:17	6620	11.56	7.52	2.0	15.0	6.7	21.9	9.1
10/9/2014 8:18	6621	9.93	9.89	-0.8	0.9	-0.6	0.4	0.4
10/9/2014 8:19	6622	9.93	9.91	-0.9	0.0	0.0	0.0	0.4
10/9/2014 8:20	6623	9.93	9.91	0.0	0.0	0.0	0.0	0.4
10/9/2014 8:21	6624	1.24	1.13	44.7	12.8	-1.0	12.0	30.5
10/9/2014 8:22	6625	0.10	0.18	47.2	48.7	0.3	49.2	49.9
10/9/2014 8:23	6626	0.09	0.11	47.5	49.2	0.2	49.5	50.0
10/9/2014 8:24	6627	0.08	0.02	80.0	54.6	-0.9	53.9	72.3
10/9/2014 8:25	6628	0.07	-0.01	88.9	89.7	0.9	90.6	94.4
10/9/2014 8:26	6629	0.07	-0.03	89.4	91.9	0.3	92.2	94.4
10/9/2014 8:27	6630	8.71	1.57	41.8	90.7	-0.3	90.5	67.1
10/9/2014 8:28	6631	16.95	2.87	0.8	25.8	7.2	33.2	1.9
10/9/2014 8:29	6632	16.84	3.02	-0.3	19.5	-0.1	19.6	1.0
10/9/2014 8:30	6633	16.71	3.14	-0.6	18.8	0.3	19.4	1.0
10/9/2014 8:31	6634	16.89	3.08	-0.7	18.6	0.7	19.4	1.2
10/9/2014 8:32	6635	15.33	4.34	-0.8	23.6	0.6	24.5	1.5
10/9/2014 8:33	6636	15.25	4.39	-0.9	19.1	0.7	20.1	1.7

SMM - Pogo Mine

10/9/2014

Timestamp	Record Number	O2 (%)	CO2 (%)	SO2 (ppm)	NO (ppm)	NO2 (ppm)	NOx (ppm)	CO (ppm)
10/9/2014 8:34	6637	15.56	4.12	-0.9	18.3	1.4	20.0	1.5
10/9/2014 8:35	6638	16.35	3.55	-0.9	19.5	1.6	21.4	1.3
10/9/2014 8:36	6639	16.15	3.65	-1.0	22.2	0.5	22.9	1.3
10/9/2014 8:37	6640	15.78	3.87	-1.0	25.0	0.9	26.2	1.3
10/9/2014 8:38	6641	15.81	3.85	-1.1	28.4	0.8	29.4	1.2
10/9/2014 8:39	6642	15.91	3.69	-1.2	29.6	1.1	31.0	1.2
10/9/2014 8:40	6643	16.11	3.49	-1.2	29.5	1.3	31.0	1.1
10/9/2014 8:41	6644	16.32	3.30	-1.2	30.1	0.4	30.6	1.1
10/9/2014 8:42	6645	16.35	3.33	-1.2	30.0	1.5	31.8	1.1
10/9/2014 8:43	6646	16.35	3.40	-1.2	30.9	0.2	31.2	1.1
10/9/2014 8:44	6647	16.60	3.25	-1.3	30.7	1.7	32.7	1.1
10/9/2014 8:45	6648	16.13	3.60	-1.2	31.7	0.5	32.4	1.0
10/9/2014 8:46	6649	16.16	3.59	-1.3	31.1	1.1	32.4	1.0
10/9/2014 8:47	6650	16.30	3.58	-1.3	31.3	1.0	32.5	0.9
10/9/2014 8:48	6651	16.47	3.46	-1.3	32.4	0.6	33.2	0.9
10/9/2014 8:49	6652	16.50	3.43	-1.3	31.2	1.1	32.6	1.0
10/9/2014 8:50	6653	16.45	3.41	-1.3	31.4	1.2	32.8	1.0
10/9/2014 8:51	6654	16.68	3.36	-1.4	33.1	1.0	34.3	1.0
10/9/2014 8:52	6655	15.38	4.24	-1.3	25.7	2.6	28.4	1.0
10/9/2014 8:53	6656	15.04	4.39	-1.4	21.0	0.9	22.2	1.8
10/9/2014 8:54	6657	14.99	4.41	-1.4	28.8	1.2	30.2	4.1
10/9/2014 8:55	6658	15.02	4.46	-1.4	48.3	1.6	50.2	1.9
10/9/2014 8:56	6659	15.09	4.49	-1.4	34.9	2.6	37.8	1.3
10/9/2014 8:57	6660	14.62	4.81	-1.4	27.4	2.9	30.6	1.9
10/9/2014 8:58	6661	14.14	5.11	-1.4	30.9	0.9	32.0	6.3
10/9/2014 8:59	6662	14.08	5.18	-1.4	40.5	0.2	40.9	13.5
10/9/2014 9:00	6663	14.15	5.18	-1.5	40.9	-0.9	40.2	3.8
10/9/2014 9:01	6664	14.42	5.09	-1.5	36.3	-0.1	36.5	2.4
10/9/2014 9:02	6665	14.58	4.96	-1.5	30.7	2.3	33.3	1.6
10/9/2014 9:03	6666	14.56	4.96	-1.5	27.6	1.1	28.9	1.4
10/9/2014 9:04	6667	14.57	4.86	-1.5	26.3	1.5	28.0	1.2
10/9/2014 9:05	6668	14.96	4.55	-1.6	31.6	0.8	32.5	1.0
10/9/2014 9:06	6669	14.65	4.69	-1.6	28.1	1.7	30.1	1.1
10/9/2014 9:07	6670	14.98	4.60	-1.6	25.7	1.2	27.2	1.1
10/9/2014 9:08	6671	15.15	4.56	-1.6	27.1	1.1	28.4	1.2
10/9/2014 9:09	6672	14.85	4.74	-1.6	26.3	1.0	27.6	1.2
10/9/2014 9:10	6673	15.39	4.44	-1.6	25.5	1.2	26.9	1.0
10/9/2014 9:11	6674	15.02	4.65	-1.6	35.0	0.0	35.3	1.0
10/9/2014 9:12	6675	15.24	4.53	-1.6	28.1	1.2	29.5	0.9
10/9/2014 9:13	6676	16.55	3.63	-1.6	28.5	0.5	29.2	1.0
10/9/2014 9:14	6677	14.26	5.25	-1.6	30.2	0.6	31.0	6.4
10/9/2014 9:15	6678	15.99	4.08	-1.7	44.5	1.1	45.8	1.4
10/9/2014 9:16	6679	15.49	4.37	-1.6	39.3	1.1	40.6	1.5
10/9/2014 9:17	6680	15.44	4.23	-1.6	41.3	3.5	45.0	5.9
10/9/2014 9:18	6681	15.75	4.04	-1.7	23.6	3.3	27.2	3.6

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Timestamp	Record	O2	CO2	SO2	NO	NO2	NOx	CO
	Number	(%)	(%)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
10/9/2014 9:19	6682	15.96	4.03	-1.7	23.4	1.1	24.8	2.3
10/9/2014 9:20	6683	14.87	4.75	-1.7	26.4	0.9	27.5	1.7
10/9/2014 9:21	6684	15.23	4.54	-1.7	26.8	2.4	29.5	1.3
10/9/2014 9:22	6685	14.41	5.13	-1.7	24.9	1.3	26.4	1.8
10/9/2014 9:23	6686	14.66	5.00	-1.8	25.9	0.8	26.9	1.6
10/9/2014 9:24	6687	14.71	4.91	-1.9	26.0	1.4	27.7	1.4
10/9/2014 9:25	6688	14.93	4.74	-1.8	25.2	0.6	26.0	1.5
10/9/2014 9:26	6689	14.66	4.92	-1.8	29.6	1.1	30.8	1.4
10/9/2014 9:27	6690	14.69	4.84	-1.8	23.0	1.3	24.6	1.3
10/9/2014 9:28	6691	15.25	4.39	-1.8	22.9	1.5	24.7	1.2
10/9/2014 9:29	6692	15.39	4.24	-1.8	23.6	1.9	25.9	1.2
10/9/2014 9:30	6693	15.86	3.94	-1.7	24.2	0.9	25.4	1.2
10/9/2014 9:31	6694	15.66	4.32	-1.8	28.1	0.3	28.7	1.2
10/9/2014 9:32	6695	15.22	4.58	-1.8	32.1	-0.1	32.2	1.2
10/9/2014 9:33	6696	16.35	3.85	-1.8	41.0	2.3	43.5	1.6
10/9/2014 9:34	6697	15.38	4.42	-1.8	22.5	1.5	24.2	1.6
10/9/2014 9:35	6698	15.29	4.51	-1.8	27.0	0.6	27.9	1.6
10/9/2014 9:36	6699	15.31	4.64	-1.8	33.3	1.5	35.0	3.2
10/9/2014 9:37	6700	14.99	4.73	-1.8	67.0	6.7	73.9	13.1
10/9/2014 9:38	6701	15.43	4.42	-1.9	59.6	6.8	66.6	1.4
10/9/2014 9:39	6702	15.53	4.29	-1.9	45.5	-0.7	45.0	1.3
10/9/2014 9:40	6703	15.27	4.33	-1.9	58.5	0.0	58.2	1.6
10/9/2014 9:41	6704	14.93	4.73	-1.9	40.5	1.6	42.3	2.0
10/9/2014 9:42	6705	15.63	4.34	-2.0	53.4	1.0	54.6	1.5
10/9/2014 9:43	6706	14.71	4.87	-1.9	40.6	1.8	42.7	1.3
10/9/2014 9:44	6707	15.08	4.66	-1.9	45.7	3.4	49.3	1.4
10/9/2014 9:45	6708	15.34	4.50	-2.0	43.9	0.7	44.8	1.1
10/9/2014 9:46	6709	14.50	5.05	-2.0	36.2	5.8	42.3	1.2
10/9/2014 9:47	6710	14.35	5.15	-1.9	47.7	1.2	49.2	1.4
10/9/2014 9:48	6711	14.57	5.03	-1.9	39.6	2.6	42.5	1.6
10/9/2014 9:49	6712	15.11	4.52	-2.0	32.6	1.0	33.9	2.9
10/9/2014 9:50	6713	15.60	4.11	-1.9	27.6	0.5	28.3	1.1
10/9/2014 9:51	6714	15.18	4.74	-1.9	46.8	-0.1	46.9	1.1
10/9/2014 9:52	6715	15.75	4.39	-1.9	83.4	1.0	84.5	1.1
10/9/2014 9:53	6716	15.69	4.48	-1.9	89.6	1.2	90.9	1.4
10/9/2014 9:54	6717	15.23	4.79	-1.9	105.4	3.0	108.5	1.4
10/9/2014 9:55	6718	15.09	4.86	-1.9	101.4	2.6	104.2	1.4
10/9/2014 9:56	6719	14.81	5.02	-1.9	99.4	2.4	102.0	1.4
10/9/2014 9:57	6720	15.44	4.58	-1.9	90.8	2.8	93.7	1.4
10/9/2014 9:58	6721	15.10	4.76	-2.0	85.5	3.6	89.3	1.4
10/9/2014 9:59	6722	15.05	4.77	-1.9	79.3	2.3	81.8	1.3
10/9/2014 10:00	6723	15.40	4.42	-2.0	70.7	3.0	73.9	1.1

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Timestamp	Record Number	O2 (%)	CO2 (%)	SO2 (ppm)	NO (ppm)	NO2 (ppm)	NOx (ppm)	CO (ppm)
10/9/2014 10:01	6724	15.70	4.14	-2.0	70.7	3.4	74.3	1.1
10/9/2014 10:02	6725	15.29	4.50	-2.0	66.4	1.1	67.6	1.1
10/9/2014 10:03	6726	15.07	4.73	-2.0	63.3	2.9	66.4	1.2
10/9/2014 10:04	6727	15.96	4.17	-2.0	74.1	-1.6	72.6	1.1
10/9/2014 10:05	6728	15.70	4.28	-2.0	56.5	5.0	61.8	1.2
10/9/2014 10:06	6729	15.11	4.67	-2.0	54.3	0.1	54.5	1.1
10/9/2014 10:07	6730	15.43	4.49	-2.0	60.3	0.7	61.1	1.1
10/9/2014 10:08	6731	15.88	4.16	-2.0	56.8	4.1	61.0	1.3
10/9/2014 10:09	6732	15.07	4.78	-1.9	38.9	-0.9	38.2	2.3
10/9/2014 10:10	6733	15.77	4.27	-1.9	76.5	0.8	77.5	1.0
10/9/2014 10:11	6734	15.53	4.34	-1.9	74.9	3.5	78.4	1.1
10/9/2014 10:12	6735	15.27	4.56	-2.0	65.2	1.8	67.2	1.3
10/9/2014 10:13	6736	15.53	4.51	-1.9	73.2	1.0	74.4	1.2
10/9/2014 10:14	6737	15.54	4.52	-2.0	71.8	2.6	74.5	1.1
10/9/2014 10:15	6738	15.54	4.44	-2.0	68.0	0.2	68.3	1.1
10/9/2014 10:16	6739	15.40	4.50	-2.0	65.4	2.5	68.1	1.2
10/9/2014 10:17	6740	15.40	4.45	-2.1	58.1	0.0	58.4	1.1
10/9/2014 10:18	6741	15.93	4.11	-2.0	62.2	3.9	66.3	1.0
10/9/2014 10:19	6742	15.51	4.35	-2.0	61.3	1.3	62.8	1.0
10/9/2014 10:20	6743	15.48	4.33	-2.1	53.0	3.8	57.0	1.0
10/9/2014 10:21	6744	15.67	4.10	-2.1	53.4	0.5	54.1	1.0
10/9/2014 10:22	6745	16.08	3.76	-2.1	51.3	2.3	53.9	1.1
10/9/2014 10:23	6746	15.60	4.18	-2.0	47.1	2.2	49.6	1.1
10/9/2014 10:24	6747	15.37	4.46	-2.1	41.9	0.4	42.6	1.1
10/9/2014 10:25	6748	15.54	4.48	-2.1	49.7	2.2	52.1	1.0
10/9/2014 10:26	6749	15.63	4.40	-2.1	73.1	2.5	75.8	1.1
10/9/2014 10:27	6750	15.73	4.26	-2.0	78.3	0.4	78.8	1.3
10/9/2014 10:28	6751	15.50	4.30	-2.0	79.0	0.9	80.1	1.4
10/9/2014 10:29	6752	15.32	4.41	-2.0	75.5	2.9	78.6	1.3
10/9/2014 10:30	6753	15.29	4.41	-2.0	73.9	1.8	75.9	1.3
10/9/2014 10:31	6754	15.50	4.18	-2.0	71.2	4.2	75.6	1.1
10/9/2014 10:32	6755	15.93	3.81	-2.0	60.6	1.6	62.4	1.1
10/9/2014 10:33	6756	15.72	3.95	-2.0	53.2	2.5	55.8	1.2
10/9/2014 10:34	6757	14.74	4.70	-1.9	47.9	2.4	50.5	1.2
10/9/2014 10:35	6758	15.61	4.18	-2.0	70.2	1.6	71.5	1.2
10/9/2014 10:36	6759	15.89	4.02	-2.0	44.1	1.4	45.7	1.3
10/9/2014 10:37	6760	15.25	4.33	-2.0	54.3	-1.9	52.6	1.1
10/9/2014 10:38	6761	15.23	4.40	-2.1	49.4	7.1	56.8	1.3
10/9/2014 10:39	6762	15.88	3.99	-2.0	55.0	1.2	56.3	1.2
10/9/2014 10:40	6763	15.28	4.31	-2.0	47.5	2.9	50.6	1.1
10/9/2014 10:41	6764	11.95	6.74	3.1	47.2	5.7	53.2	6.1
10/9/2014 10:42	6765	9.90	9.74	-2.0	2.6	7.6	10.3	0.6
10/9/2014 10:43	6766	9.90	9.70	-2.0	0.1	0.1	0.2	0.2
10/9/2014 10:44	6767	9.89	9.79	-2.1	0.0	0.1	0.1	0.2
10/9/2014 10:45	6768	5.14	5.00	21.1	0.4	0.0	0.4	11.3

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10/9/2014

Timestamp	Record	O2	CO2	SO2	NO	NO2	NOx	CO
	Number	(%)	(%)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
10/9/2014 10:46	6769	0.10	0.21	44.7	36.2	0.4	36.7	48.1
10/9/2014 10:47	6770	0.08	0.20	46.7	47.8	0.1	48.1	49.3
10/9/2014 10:48	6771	0.07	0.20	48.3	48.0	0.1	48.3	49.3
10/9/2014 10:49	6772	0.07	0.20	48.4	48.1	0.1	48.4	49.3
10/9/2014 10:50	6773	0.07	0.20	73.7	49.1	2.0	51.3	66.0
10/9/2014 10:51	6774	0.06	0.20	91.7	86.4	-0.3	86.1	93.0
10/9/2014 10:52	6775	0.07	0.16	93.0	89.9	0.2	90.3	93.1
10/9/2014 10:53	6776	13.77	3.81	8.0	82.0	-0.5	81.6	32.2
10/9/2014 10:54	6777	15.41	4.03	-0.8	56.8	1.4	58.5	1.0
10/9/2014 10:55	6778	15.49	4.08	-1.5	54.7	-0.7	54.1	1.1
10/9/2014 10:56	6779	15.52	4.16	-1.7	52.3	0.4	52.9	1.2
10/9/2014 10:57	6780	15.78	3.98	-1.8	51.1	0.9	52.2	1.4
10/9/2014 10:58	6781	16.08	3.81	-1.9	32.0	-0.3	31.9	1.4
10/9/2014 10:59	6782	16.69	3.43	-2.0	18.3	1.1	19.7	1.3
10/9/2014 11:00	6783	16.34	3.64	-2.1	17.4	1.3	19.0	1.3
10/9/2014 11:01	6784	16.31	3.67	-2.1	17.7	0.3	18.3	1.2
10/9/2014 11:02	6785	16.82	3.34	-2.2	18.7	0.5	19.5	1.3
10/9/2014 11:03	6786	16.45	3.49	-2.1	18.4	1.1	19.7	1.4
10/9/2014 11:04	6787	16.47	3.38	-2.2	18.9	0.6	19.7	1.4
10/9/2014 11:05	6788	17.01	3.00	-2.2	20.0	0.8	21.1	1.3
10/9/2014 11:06	6789	16.52	3.41	-2.2	20.2	0.9	21.3	1.2
10/9/2014 11:07	6790	16.56	3.48	-2.2	20.1	0.4	20.8	1.1
10/9/2014 11:08	6791	17.05	3.14	-2.2	20.8	1.0	22.1	1.0
10/9/2014 11:09	6792	16.63	3.40	-2.2	20.9	1.2	22.3	1.0
10/9/2014 11:10	6793	16.62	3.42	-2.2	20.9	0.7	21.9	1.0
10/9/2014 11:11	6794	17.11	3.09	-2.3	23.1	0.7	24.1	0.9
10/9/2014 11:12	6795	16.63	3.40	-2.3	23.3	1.3	24.9	0.9
10/9/2014 11:13	6796	16.64	3.41	-2.2	26.3	0.5	27.0	0.9
10/9/2014 11:14	6797	16.97	3.13	-2.3	27.9	0.8	29.0	0.8
10/9/2014 11:15	6798	16.45	3.36	-2.3	28.7	0.9	29.8	0.9
10/9/2014 11:16	6799	16.27	3.55	-2.4	31.3	0.7	32.3	0.9
10/9/2014 11:17	6800	16.49	3.52	-2.3	31.1	1.2	32.5	0.8
10/9/2014 11:18	6801	15.99	4.05	-2.4	31.2	0.3	31.7	0.9
10/9/2014 11:19	6802	15.86	4.19	-2.3	57.7	-0.2	57.8	1.0
10/9/2014 11:20	6803	15.91	4.11	-2.3	66.3	-2.3	64.1	0.9
10/9/2014 11:21	6804	16.04	3.93	-2.4	66.3	4.1	70.6	1.0
10/9/2014 11:22	6805	15.71	4.14	-2.4	67.1	0.9	68.2	1.0
10/9/2014 11:23	6806	15.79	4.08	-2.4	61.8	2.6	64.7	0.9

SMM - Pogo Mine

10/9/2014

Timestamp	Record Number	O2 (%)	CO2 (%)	SO2 (ppm)	NO (ppm)	NO2 (ppm)	NOx (ppm)	CO (ppm)
10/9/2014 11:24	6807	16.00	3.96	-2.4	59.3	1.5	60.8	0.9
10/9/2014 11:25	6808	16.25	3.63	-2.4	54.5	0.8	55.5	1.0
10/9/2014 11:26	6809	15.83	3.83	-2.3	50.8	0.1	51.1	1.0
10/9/2014 11:27	6810	15.45	4.11	-2.3	44.4	2.1	46.7	1.0
10/9/2014 11:28	6811	16.17	3.76	-2.4	57.5	2.1	59.4	1.0
10/9/2014 11:29	6812	16.03	3.82	-2.4	44.3	-0.1	44.3	1.1
10/9/2014 11:30	6813	15.31	4.31	-2.4	35.8	-1.9	34.5	1.1
10/9/2014 11:31	6814	15.67	4.08	-2.4	45.2	3.7	48.8	1.1
10/9/2014 11:32	6815	16.29	3.64	-2.3	43.5	1.9	45.6	1.0
10/9/2014 11:33	6816	15.36	4.24	-2.3	36.8	-1.6	35.5	1.1
10/9/2014 11:34	6817	15.62	4.09	-2.4	38.8	3.9	43.0	1.1
10/9/2014 11:35	6818	16.15	3.76	-2.4	44.2	-0.7	43.8	1.0
10/9/2014 11:36	6819	15.70	3.96	-2.4	34.3	0.2	34.6	1.1
10/9/2014 11:37	6820	15.00	4.73	-2.3	42.6	2.5	45.7	8.9
10/9/2014 11:38	6821	15.70	4.16	-2.3	65.3	-4.1	61.1	1.7
10/9/2014 11:39	6822	15.98	4.03	-2.3	70.0	-1.1	68.5	1.3
10/9/2014 11:40	6823	15.97	4.04	-2.3	85.9	3.9	90.0	1.3
10/9/2014 11:41	6824	16.08	3.95	-2.2	76.1	3.0	79.3	1.2
10/9/2014 11:42	6825	15.34	4.41	-2.3	65.6	3.7	69.8	1.1
10/9/2014 11:43	6826	16.36	3.79	-2.3	69.1	4.2	73.5	1.2
10/9/2014 11:44	6827	16.12	3.87	-2.3	49.7	1.1	50.8	1.3
10/9/2014 11:45	6828	15.80	4.13	-2.4	42.5	-0.8	41.9	1.3
10/9/2014 11:46	6829	15.87	4.07	-2.4	42.7	0.9	43.8	1.2
10/9/2014 11:47	6830	15.98	3.92	-2.3	35.0	3.2	38.3	1.2
10/9/2014 11:48	6831	16.03	3.69	-2.3	42.7	0.2	43.0	1.1
10/9/2014 11:49	6832	15.46	4.21	-2.3	34.2	5.6	40.0	1.1
10/9/2014 11:50	6833	15.87	4.04	-2.3	41.8	1.8	43.8	1.1
10/9/2014 11:51	6834	16.26	3.73	-2.3	40.1	-0.1	40.3	1.1
10/9/2014 11:52	6835	15.45	4.32	-2.3	30.6	1.0	31.8	1.1
10/9/2014 11:53	6836	15.32	4.41	-2.4	47.8	1.3	49.5	0.9
10/9/2014 11:54	6837	15.89	4.06	-2.4	52.8	1.8	54.7	0.9
10/9/2014 11:55	6838	15.53	4.34	-2.5	38.5	0.8	39.4	1.0
10/9/2014 11:56	6839	16.20	3.92	-2.4	39.9	1.0	41.1	1.0
10/9/2014 11:57	6840	16.01	3.89	-2.5	34.0	1.8	35.9	1.0
10/9/2014 11:58	6841	15.67	4.16	-2.4	27.6	3.2	30.8	1.1
10/9/2014 11:59	6842	15.77	4.27	-2.4	42.9	-2.0	41.1	0.9
10/9/2014 12:00	6843	16.01	4.17	-2.4	63.9	0.7	64.8	0.9
10/9/2014 12:01	6844	15.94	4.13	-2.5	62.5	-1.6	60.4	1.1
10/9/2014 12:02	6845	15.85	4.19	-2.4	43.0	3.4	46.6	1.2
10/9/2014 12:03	6846	15.67	4.32	-2.4	39.1	1.1	40.2	1.1
10/9/2014 12:04	6847	16.32	3.84	-2.4	45.6	2.4	48.0	1.1
10/9/2014 12:05	6848	15.92	4.12	-2.5	38.5	-0.6	38.1	1.1
10/9/2014 12:06	6849	15.55	4.35	-2.5	31.5	0.8	32.7	1.1
10/9/2014 12:07	6850	15.99	4.06	-2.5	38.7	1.5	40.2	1.1

SMM - Pogo Mine

10/9/2014

Timestamp	Record Number	O2 (%)	CO2 (%)	SO2 (ppm)	NO (ppm)	NO2 (ppm)	NOx (ppm)	CO (ppm)
10/9/2014 12:08	6851	16.07	3.78	-2.5	38.0	0.6	38.8	1.0
10/9/2014 12:09	6852	15.44	4.19	-2.5	30.0	2.2	32.6	1.1
10/9/2014 12:10	6853	15.75	4.12	-2.5	35.2	2.7	38.1	1.2
10/9/2014 12:11	6854	16.41	3.72	-2.5	36.8	1.3	38.2	1.1
10/9/2014 12:12	6855	15.39	4.38	-2.5	29.1	1.2	30.5	1.1
10/9/2014 12:13	6856	15.70	4.20	-2.5	33.3	3.6	37.1	1.0
10/9/2014 12:14	6857	16.09	4.03	-2.5	31.0	-2.2	28.9	1.1
10/9/2014 12:15	6858	16.05	4.08	-2.5	28.5	4.9	33.7	3.5
10/9/2014 12:16	6859	15.90	4.19	-2.5	33.3	0.8	34.3	0.9
10/9/2014 12:17	6860	16.38	3.89	-2.5	30.6	1.1	31.9	0.9
10/9/2014 12:18	6861	16.01	3.97	-2.5	30.8	1.2	32.4	0.9
10/9/2014 12:19	6862	15.95	3.92	-2.5	29.4	0.8	30.4	0.9
10/9/2014 12:20	6863	11.41	7.44	3.3	27.1	-2.0	24.5	5.6
10/9/2014 12:21	6864	9.89	10.02	-2.3	2.8	0.4	3.0	0.3
10/9/2014 12:22	6865	9.87	10.06	-2.4	0.0	0.0	0.1	0.2
10/9/2014 12:23	6866	9.87	10.07	-2.5	0.0	0.0	0.1	0.2
10/9/2014 12:24	6867	9.86	10.08	-2.5	0.0	0.0	0.0	0.2
10/9/2014 12:25	6868	8.28	8.29	7.9	0.0	0.0	0.0	1.8
10/9/2014 12:26	6869	0.11	0.43	45.8	24.9	-3.1	21.6	41.8
10/9/2014 12:27	6870	0.09	0.22	47.5	47.5	0.0	47.7	49.1
10/9/2014 12:28	6871	0.07	0.18	47.7	47.7	0.1	47.9	49.2
10/9/2014 12:29	6872	0.07	0.05	84.0	57.9	-3.6	53.4	74.0
10/9/2014 12:30	6873	0.06	0.04	91.2	88.9	0.2	89.2	92.9
10/9/2014 12:31	6874	0.07	0.15	91.5	89.3	0.1	89.5	92.9
10/9/2014 12:32	6875	0.07	0.20	91.7	89.3	0.2	89.5	93.0
10/9/2014 12:33	6876	15.27	1.75	4.0	65.2	13.5	78.8	40.2
10/9/2014 12:34	6877	9.90	9.83	-2.3	0.5	-0.1	0.5	0.6
10/9/2014 12:35	6878	9.90	9.85	-1.9	0.0	0.0	0.1	0.2
10/9/2014 12:36	6879	9.90	9.86	0.9	0.0	0.0	0.0	0.2
10/9/2014 12:37	6880	1.41	1.23	93.1	23.7	-2.2	16.1	53.6
10/9/2014 12:38	6881	0.06	0.16	95.5	89.8	0.0	89.9	91.2
10/9/2014 12:39	6882	0.05	0.03	92.6	90.1	0.1	90.3	90.2
10/9/2014 12:40	6883	0.04	0.05	89.7	90.1	0.2	90.3	90.1
10/9/2014 12:41	6884	14.21	13.06	17.4	81.7	0.1	80.1	50.8
10/9/2014 12:42	6885	20.88	20.67	0.0	4.7	-1.6	0.6	0.5
10/9/2014 12:43	6886	20.90	20.68	0.0	0.0	0.0	0.1	-0.1
10/9/2014 12:44	6887	5.65	5.04	77.1	16.2	-3.8	8.8	38.1
10/9/2014 12:45	6888	0.07	0.21	89.3	87.2	1.8	89.0	89.2
10/9/2014 12:46	6889	1.77	0.21	93.1	103.3	-4.5	93.9	NAN
10/9/2014 12:47	6890	0.06	0.20	96.2	168.1	2.7	171.0	NAN
10/9/2014 12:48	6891	2.62	0.11	45.2	123.9	1.2	118.1	NAN
10/9/2014 12:49	6892	0.04	0.02	48.2	48.1	0.3	48.5	47.6
10/9/2014 12:50	6893	0.04	0.11	48.2	47.9	0.3	48.3	47.7
10/9/2014 12:51	6894	0.03	0.19	48.1	47.8	0.2	48.3	47.7
10/9/2014 12:52	6895	16.90	0.23	2.6	34.8	7.1	41.7	20.5

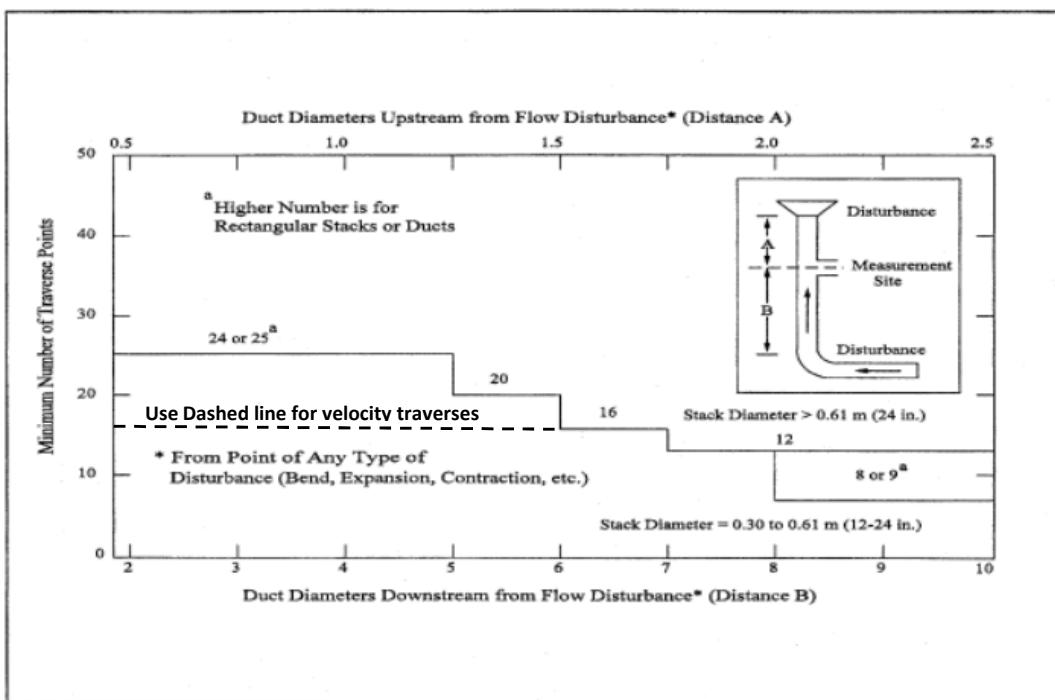
RM 1 - Minimum Number of Traverse Points For Velocity & PM Traverses

Client Sumitomo Metal Mining LLC - Pogo Mine
 Location Delta Junction, AK
 Source Incinerator
 Operator J. Rosburg

Stack Diameter (in)	12"		
Upstream Distance (in)	> 24"	Diameters	> 2
Downstream Distance (in)	> 96"	Diameters	> 8
Port Depth (in)	6"		
Port Diameter (in)	3/4" = CEM, 4" = M5		

Location of Traverse Points in Circular Stacks

Traverse Point Number	Number of traverse points (% of stack diameter from inside wall)						
	6	8	10	12	16	20	24
1	4.4	3.2	2.6	2.1	1.6	1.3	1.1
2	14.5	10.5	8.2	6.7	4.9	2.9	3.2
3	29.6	19.4	14.6	11.8	8.5	6.7	5.5
4	70.4	32.3	22.6	17.7	12.5	9.7	7.9
5	85.4	67.7	34.2	25.0	16.9	12.9	10.5
6	95.6	80.6	66.8	35.6	22.0	16.5	12.2
7		89.5	77.4	64.4	28.3	20.4	16.1
8		96.8	85.4	75.0	37.5	25.0	19.4
9			91.8	82.3	62.5	30.6	23.0
10			97.4	88.2	71.7	38.8	27.2
11				93.3	78.0	61.2	32.3
12				97.9	83.1	69.4	39.8
13					87.5	75.0	60.2
14					91.5	79.6	67.7
15					95.1	83.5	72.8
16					98.4	87.1	77.0
17						90.3	80.6
18						93.3	83.9
19						96.1	86.8
20						98.7	88.6
21							92.1
22							94.5
23							96.8
24							99.9





ISOKINETIC SAMPLE DATA FORM

Plant: $\Sigma m_m / - P_{\text{loss}}$

Filter ID:

312

Scientific Train

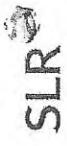
Imp.	Initial	Final	moisture train.	Final
1	700.9	449.9		
2	680.6	301.1		
3	702.5	711.3		
4	686.3	689.2		
5	842.3	832.2		
			Net Gain	
Location:	Vesta Junction, AK	A/C		
Source I.D.:	Incinerator			
Date:	10/14			
Flow Traverse Time:	NA			
Run No.:	IS-1			
Operators:	DB AW			
Meter Box I.D.:	Hawkeye			
Meter Y:	1.0581			
Meter Delta H@:	1.6175			
Probe I.D./Impinger outlet I.D.:	314 / 316			
Probe Length/Type:	341			
Pilot Coeff. (Cp):	0.84			
Ambient Temp. (°F):	80			
Baro. Press. (in. Hg):	28.45			
Static Press. (in H ₂ O):	-0.12			
O ₂ (%):	21.05			
CO ₂ (%):	7.5			
Duct Dia. (in):	12"			
B _{use} (assumed):	0.15			
Nozzle Dia. (in):	0.306			
K Factor:	6.98			
Leak Check:				
Pre:	0.001			
Post:	0.000			
Pitot:				
Pre:	10			in. Hg Vac.
Post:	9			in. Hg Vac.
Impact:	0			Static
	0			in. H ₂ O/15 sec.
	0			in. H ₂ O/15 sec.

Total Time	Vol. (DACF)	Avg. ΔP	Avg. ΔH	Avg. t _s	Average DGM Temp.	Max. Vac.
123	54.696	0.655	2.46	159.2	87.1	7

Plant = SMM - Pogo Mine
 Plant Location = Delta Junction, AK
 Source ID = Incinerator
 Run No = 15-1
 Date = 10/07/14
 Run Time = 0905-1012
 Sample Duration (min) = 63

Point Duration (min) = 5
 Bat. Pres. (in Hg) = 28.75
 Static Pres. (in WC) = -0.22
 Nozzle Dia (in WC) = 0.3070
 Meter dH @ = 1.8975
 Meter Yd = 1.0081
 H2O Mass (ml/g) = 391.1

Point No.	DGM Reading (acf)	Sample Volume (acf)	dP (in WC)	dP 1/2 (in WC)1/2	dH (in WC)	dH1/2 (in WC)1/2	Stack T (F)	DGM Inlet (F)	DGM Outlet (F)	DGM Ave (F)	velocity (ft/s)	Stack Pres. (in Hg)	Meter Pres. (in Hg)
1	934.442	4.548	0.49	0.70	2.80	1.67	158	78.0	74.0	76.0	45.4	28.73	28.96
2	938.990	4.480	0.46	0.68	2.63	1.62	158	86.0	75.0	80.5	44.0	28.73	28.94
3	943.470	4.460	0.45	0.67	2.57	1.60	158	90.0	76.0	83.0	43.5	28.73	28.94
4	947.930	4.470	0.45	0.67	2.57	1.60	160	92.0	78.0	85.0	43.6	28.73	28.94
5	952.400	4.380	0.43	0.66	2.45	1.57	158	93.0	80.0	86.5	42.6	28.73	28.93
6	956.780	4.194	0.39	0.62	2.23	1.49	158	95.0	81.0	88.0	40.5	28.73	28.91
1	960.974	4.336	0.43	0.66	2.48	1.57	159	91.0	83.0	87.0	42.6	28.73	28.93
2	965.310	4.260	0.41	0.64	2.34	1.53	160	95.0	84.0	89.5	41.6	28.73	28.92
3	969.570	4.250	0.41	0.64	2.34	1.53	161	97.0	85.0	91.0	41.7	28.73	28.92
4	973.820	4.380	0.43	0.66	2.48	1.57	159	98.0	86.0	92.0	42.6	28.73	28.93
5	978.200	4.230	0.40	0.63	2.28	1.51	160	98.0	87.0	92.5	41.1	28.73	28.92
6	982.430	4.200	0.41	0.64	2.34	1.53	161	99.0	88.0	93.5	41.7	28.73	28.92
	986.630												
	989.138												
	54.696	0.43	0.655	2.46	1.57	159	92.7	81.4	87.0	42.6	28.73	28.93	



ISOKINETIC SAMPLE DATA FORM

B14

Filter ID: 1314

Plant:	Smart - POGO	Filter ID:	B14
Location:	Delta Junction, AK	Ambient Temp. (°F):	88
Source I.D.:	Incinerator	Baro. Press. (in. Hg):	28.75
Date:	10/7/14	Static Press. (in H ₂ O):	-0.22
Flow Traverse Time:	N/A	O ₂ (%):	10
Run No.:	T5-2	CO ₂ (%):	4
Operators:	DI3, AW	Duct Dia. (in.):	12"
Meter Box I.D.:	Flame Keye	B _{ws} (assumed):	0.24
Meter Y:	1.0081	Nozzle Dia. (in.):	0.307
Meter Delta H(@):	1.8875	K Factor:	5.58
Probe I.D./Impinger outlet I.D.:	3/4	Leak Check:	
Probe Length/Type:	3'	Pre:	0.002
Pitot Coeff. (Cp):	0.84	Post:	0.000

DGM Clock Time	Port/Point I.D.	Sample Time (min.)	DGM Reading (DACF)	ΔP (in. H ₂ O)	ΔH (in. H ₂ O)	Stack Temp. (F)	Probe Temp. (F)	Filter Temp. (F)	Imp. Outlet Temp. (F)	DGM Temp. (F)	Vacuum (in. Hg)
17/7	W - 1	0	206.471	0.44	2.44	151	245	254	89	70	+7
	2	5	210.79	0.40	2.23	155	260	252	91	90	-7
	3	10	214.89	0.41	2.29	157	254	250	93	90	+7
	4	15	219.10	0.42	2.34	158	250	250	97	90	+8
	5	20	223.35	0.44	2.46	156	250	252	99	91	-9
	6	25	227.57	0.44	2.46	156	250	250	91	91	-9
17/7/250	N - 1	30	232.675	0.95	2.51	157	252	263	98	92	+10
	2	35	236.54	0.45	2.51	157	251	248	93	93	+10
	3	40	241.05	0.47	2.34	163	250	245	100	100	+10
	4	45	245.29	0.47	2.34	167	250	250	93	93	+10
	5	50	249.56	0.41	2.24	167	250	250	102	94	+10
	6	55	253.84	0.42	2.34	164	250	250	104	95	+10
	60	58	256.416								
18/8											
	Total Time	Vol. (DACF)	Avg. ΔP	Avg. ΔH	Avg. t_s						Average DGM Temp. Max. Vac.

Plant = SMM - Pogo Mine
 Plant Location = Delta Junction, AK
 Source ID = Incinerator
 Run No = 15-2
 Date = 10/07/14
 Run Time = 1717-1818
 Sample Duration (min) = 58

Point Duration (min) = 5
 Bat. Pres. (in Hg) = 28.75
 Static Pres. (in WC) = -0.22
 Nozzle Dia (in WC) = 0.307
 Meter dH @ = 1.8975
 Meter Yd = 1.0081
 H2O Mass (ml/g) = 355.6

Point No.	DGM Reading (acf)	Sample Volume (acf)	dP (in WC)	dP 1/2 (in WC)1/2	dH (in WC)	dH1/2 (in WC)1/2	Stack T (F)	DGM Inlet (F)	DGM Outlet (F)	DGM Ave (F)	velocity (ft/s)	Stack Pres. (in Hg)	Meter Pres. (in Hg)
W1	206.471	4.319	0.44	0.66	2.46	1.57	151.0	89.0	90.0	89.5	42.8	28.73	28.93
	210.790	4.100	0.40	0.63	2.23	1.49	155.0	91.0	90.0	90.5	41.0	28.73	28.91
	214.890	4.210	0.41	0.64	2.29	1.51	157.0	93.0	90.0	91.5	41.5	28.73	28.92
	219.100	4.250	0.42	0.65	2.34	1.53	158.0	97.0	90.0	93.5	42.1	28.73	28.92
	223.350	4.180	0.44	0.66	2.46	1.57	156.0	99.0	91.0	95.0	43.0	28.73	28.93
	227.530	4.545	0.44	0.66	2.46	1.57	156.0	99.0	91.0	95.0	43.0	28.73	28.93
N1	232.075	4.465	0.45	0.67	2.51	1.58	157.0	98.0	92.0	95.0	43.5	28.73	28.93
	236.540	4.460	0.45	0.67	2.51	1.58	157.0	100.0	93.0	96.5	43.5	28.73	28.93
	241.000	4.290	0.42	0.65	2.34	1.53	163.0	101.0	93.0	97.0	42.2	28.73	28.92
	245.290	4.270	0.42	0.65	2.34	1.53	167.0	102.0	93.0	97.5	42.4	28.73	28.92
	249.560	4.280	0.41	0.64	2.29	1.51	167.0	103.0	94.0	98.5	41.9	28.73	28.92
	253.840	2.576	0.42	0.65	2.34	1.53	166.0	104.0	95.0	99.5	42.3	28.73	28.92
256.416													
49.945		0.43	0.653	2.38	1.54	159.2	98.0	91.8	94.9	42.4	28.73	28.93	



ISOKINETIC SAMPLE DATA FORM

Plant:	5mm - PUGO	Filter ID:	317
Location:	Delta Ducts, Alc	Ambient Temp. (°F):	80
Source I.D.:	Incentor	Baro. Press. (in. Hg):	28.60
Date:	10/18/14	Static Press. (in. H ₂ O):	-0.21
Flow Traverse Time:		O ₂ (%):	~16
Run No.:	15-3	CO ₂ (%):	~4
Operators:	DS AW	Duct Dia. (in):	1.2"
Meter Box I.D.:	411wkeye	B _{ws} (assumed):	0.26
Meter Y.:	1.0087	Nozzle Dia. (in):	0.301
Meter Delta H@:	1.8975	K Factor:	5.22
Probe I.D./Impinger outlet I.D.:	314	Leak Check:	
Probe Length (Type):	2m5	Pre:	0.000
Pivot Coeff. (Cd):	0.84	Post:	0.002
DGM Clock Time	Port/Point I.D.	Sample Time (min.)	DGM Reading (DACP)
1636	1	0	577.329
	2	5	581.50
	3	10	585.63
	4	15	588.02
	5	20	593.82
	6	25	597.94
	7	30	602.083
	8	35	606.83
	9	40	611.21
	4	45	615.81
	5	50	620.39
	6	55	624.96
	7	60	629.51
	743	64	633.13
Total Time	Vol. (DACP)	Avg. ΔP	Avg. ΔH
			Avg. t _s
			Average DGM Temp.
			Max. Vac.

Plant = SMM - Pogo Mine
 Plant Location = Delta Junction, AK
 Source ID = Incinerator
 Run No = 15-3
 Date = 10/08/14
 Run Time = 1636-1743
 Sample Duration (min) = 64

Point Duration (min) = 5
 Bar. Pres. (in Hg) = 28.6
 Static Pres. (in WC) = -0.21
 Nozzle Dia (in WC) = 0.3070
 Meter dH @ = 1.8975
 Meter Yd = 1.0081
 H2O Mass (ml/g) = 389.1

Point No.	DGM Reading (acf)	Sample Volume (acf)	dP (in WC)	dP 1/2 (in WC)1/2	dH (in WC)	dH1/2 (in WC)1/2	Stack T (F)	DGM Inlet (F)	DGM Outlet (F)	DGM Ave (F)	velocity (ft/s)	Stack Pres. (in Hg)	Meter Pres. (in Hg)
W1	577.329	4.171	0.43	0.66	2.24	1.50	154.0	96.0	96.0	96.0	42.5	28.58	28.76
	581.500	4.130	0.41	0.64	2.14	1.46	161.0	101.0	97.0	99.0	41.8	28.58	28.76
	585.630	2.390	0.38	0.62	1.98	1.41	165.0	103.0	100.0	101.5	40.3	28.58	28.75
	588.020	5.800	0.41	0.64	2.14	1.46	165.0	104.0	97.0	100.5	41.9	28.58	28.76
	593.820	4.140	0.41	0.64	2.14	1.46	163.0	106.0	97.0	101.5	41.8	28.58	28.76
	597.960	4.123	0.41	0.64	2.14	1.46	162.0	106.0	97.0	101.5	41.8	28.58	28.76
N1	602.083	4.747	0.50	0.71	2.61	1.62	161.0	104.0	98.0	101.0	46.1	28.58	28.79
	606.830	4.380	0.51	0.71	2.66	1.63	160.0	107.0	98.0	102.5	46.6	28.58	28.80
	611.210	4.600	0.51	0.71	2.66	1.63	158.0	107.0	98.0	102.5	46.5	28.58	28.80
	615.810	4.580	0.51	0.71	2.66	1.63	158.0	107.0	99.0	103.0	46.5	28.58	28.80
	620.390	4.570	0.51	0.71	2.66	1.63	158.0	107.0	99.0	103.0	46.0	28.58	28.79
	624.960	4.550	0.50	0.71	2.61	1.62	157.0	108.0	99.0	103.5	46.0	28.58	28.79
6	629.510	0.50	0.71	2.61	1.62	159.0	108.0	99.0	103.5	46.1	28.58	28.60	
	633.139												
	55.810	0.46	0.677	2.40	1.55	160.1	104.9	98.0	101.5	44.2	28.58	28.76	

Plant = SMM - Pogo Mine
 Plant Location = Delta Junction, AK
 Source ID = Incinerator
 Run No = 15-4
 Date = 10/09/14
 Run Time = 1116-1227
 Sample Duration (min) = 68

Point Duration (min) = 5
 Bar. Pres. (in Hg) = 28.3
 Static Pres. (in WC) = -0.22
 Nozzle Dia (in WC) = 0.3070
 Meter dH @ = 1.8975
 Meter Yd = 1.0081
 H2O Mass (ml/g) = 371.3

Point No.	DGM Reading (acf)	Sample Volume (act)	dP (in WC)	dP1/2 (in WC1/2)	dH (in WC)	dH1/2 (in WC1/2)	Stack T (F)	DGM Inlet (F)	DGM Outlet (F)	DGM Ave (F)	Velocity (ft/s)	Stack Pres (in Hg)	Meter Pres. (in Hg)
W1	749.471	4.329	0.43	0.66	2.37	1.54	151.0	90.0	90.0	90.0	42.7	28.28	28.47
	753.800	4.320	0.43	0.66	2.37	1.54	156.0	94.0	89.0	91.5	42.8	28.28	28.47
	758.120	4.170	0.41	0.64	2.14	1.46	157.0	96.0	89.0	92.5	41.9	28.28	28.46
	762.290	4.290	0.43	0.66	2.37	1.54	156.0	98.0	90.0	94.0	42.8	28.28	28.47
	766.580	4.270	0.41	0.64	2.14	1.46	157.0	99.0	90.0	94.5	41.9	28.28	28.46
	770.850	2.248	0.43	0.66	2.37	1.54	158.0	100.0	90.0	95.0	42.9	28.28	28.47
N1	773.098	6.312	0.43	0.66	2.37	1.54	156.0	100.0	90.0	95.0	42.8	28.28	28.47
	779.410	4.140	0.46	0.68	2.40	1.55	154.0	101.0	91.0	96.0	44.2	28.28	28.48
	783.550	4.410	0.48	0.69	2.51	1.58	156.0	101.0	91.0	96.5	45.3	28.28	28.48
	787.960	4.600	0.50	0.71	2.61	1.62	156.0	102.0	92.0	97.0	46.2	28.28	28.49
	792.560	4.580	0.50	0.71	2.61	1.62	156.0	102.0	92.0	97.5	46.2	28.28	28.49
	797.140	4.570	0.50	0.71	2.61	1.62	155.0	103.0	93.0	97.5	46.2	28.28	28.49
801.710	801.710	4.410	0.48	0.69	2.51	1.58	154.0	102.0	93.0	98.0	45.2	28.28	28.48
	806.120	2.786	0.48	0.69	2.51	1.58	152.0	103.0	94.0	94.0	45.1	28.28	28.48
		808.906											
		59.435	0.46	0.674	2.42	1.56	155.3	99.4	91.0	94.9	44.0	28.28	28.48

Plant =	SMM - Pogo Mine	Point Duration (min) =
Plant Location =	Delta Junction, AK	Bar. Pres. (in Hg) =
Source ID =	Incinerator	Static Pres. (in WC) =
Run No =	129-1	Nozzle Dia (in WC) =
Date =	10/07/14	Meter DH @ =
Run Time =	1121-1-324	Meter Yd @ =
Sample Duration (min) =	129	H2O Mass (m/g) =

Plant =	SMM - Pogo Mine	Point Duration (min) =	10	Moisture									
Plant Location =	Delta Junction, AK	Bar. Pres. (in Hg) =	28.75	Initial									
Source ID =	Incinerator	Static Pres. (in WC) =	-0.23	Final									
Run No =	129-1	Nozzle Dia (in WC) =	0.3070	Change	237.1								
Date =	10/07/14	Meter dH @ =	1.8975	688.0	217.3								
Run Time =	1121-1324	Meter Yd =	1.0081	600.7	293.6								
Sample Duration (min) =	129	H2O Mass (ml/g) =	776.0	707.8	5.8								
				713.6	2.8								
				718.7	19.4								
				879.3	19.4								
				898.7	19.4								
				100.5	28.93								
				43.1	28.93								
				43.073	28.927								
Point No.	DGM Reading (act)	Sample Volume (acf)	dP (in WC)	dP1/2 (in WC)	dH (in WC)	dH1/2 (in WC)1/2	Stack T (F)	DGM Inlet (F)	DGM Outlet (F)	DGM Ave (F)	Velocity (ft/s)	Stack Pres (in Hg)	Meter Pres. (in Hg)
1	990.092	4.428	0.46	0.678	2.57	1.603	145.0	86.0	85.0	85.5	43.6	28.73	28.94
	994.520	4.330	0.43	0.656	2.40	1.549	153.0	93.0	85.0	89.0	42.4	28.73	28.93
2	998.850	4.350	0.43	0.656	2.40	1.549	156.0	95.0	86.0	90.5	42.5	28.73	28.93
	1003.200	4.340	0.43	0.656	2.40	1.549	155.0	97.0	86.0	91.5	42.5	28.73	28.93
3	1007.540	4.230	0.40	0.632	2.23	1.493	158.0	99.0	87.0	93.0	41.0	28.73	28.91
	1011.770	4.190	0.42	0.648	2.34	1.530	158.0	99.0	87.0	93.0	42.1	28.73	28.92
4	1015.960	4.270	0.42	0.648	2.34	1.530	159.0	100.0	88.0	94.0	42.1	28.73	28.92
	1020.230	4.260	0.41	0.640	2.29	1.513	161.0	101.0	89.0	95.0	41.7	28.73	28.92
5	1024.490	4.360	0.43	0.656	2.40	1.549	160.0	100.0	90.0	95.0	42.6	28.73	28.93
	1028.850	4.320	0.42	0.648	2.34	1.530	158.0	101.0	90.0	95.5	42.1	28.73	28.92
6	1033.170	4.380	0.43	0.656	2.40	1.549	156.0	101.0	90.0	95.5	42.5	28.73	28.93
	1037.550	4.350	0.43	0.656	2.40	1.549	157.0	102.0	91.0	96.5	42.5	28.73	28.93
1	1041.900	4.490	0.47	0.686	2.62	1.619	152.0	97.0	92.0	94.5	44.3	28.73	28.94
	1046.390	4.440	0.46	0.678	2.57	1.603	156.0	99.0	92.0	95.5	43.9	28.73	28.94
2	1050.830	4.520	0.47	0.686	2.62	1.619	156.0	101.0	92.0	96.5	44.4	28.73	28.94
	1055.350	4.650	0.46	0.678	2.57	1.603	155.0	102.0	92.0	97.0	43.9	28.73	28.94
3	1060.000	4.450	0.46	0.678	2.57	1.603	155.0	102.0	93.0	97.5	43.9	28.73	28.94
	1064.450	4.460	0.44	0.663	2.46	1.568	160.0	103.0	93.0	98.0	43.1	28.73	28.93
4	1068.910	4.300	0.41	0.640	2.29	1.513	164.0	103.0	93.0	98.0	41.8	28.73	28.92
	1073.210	4.190	0.44	0.663	2.46	1.568	164.0	104.0	94.0	99.0	43.3	28.73	28.93
5	1077.400	4.210	0.41	0.640	2.29	1.513	164.0	104.0	94.0	99.0	41.8	28.73	28.92
	1081.610	4.270	0.42	0.648	2.34	1.530	162.0	104.0	94.0	99.0	42.2	28.73	28.92
6	1085.880	4.180	0.40	0.632	2.23	1.493	162.0	104.0	95.0	99.5	41.2	28.73	28.91
	1090.060	4.230	0.41	0.640	2.29	1.513	163.0	104.0	95.0	99.5	41.7	28.73	28.92
7	1094.290	4.270	0.41	0.640	2.29	1.513	162.0	105.0	95.0	100.0	41.7	28.73	28.92
	1098.560	3.305	0.44	0.663	2.46	1.568	158.0	105.0	96.0	100.5	43.1	28.73	28.93
8	1101.865												
	111.773	0.431	0.656	2.407	1.551	158.038	100.423	90.923	95.673	42.605	28.733	28.927	

SLR

#2

ISOKINETIC SAMPLE DATA FORM

Plant: 5mm - P060

Filter ID: B/5

Location:	Delta Junction + Ac	Ambient Temp. (°F):	80
Source I.D.:	Incinerator	Aero. Press. (in. Hg):	28.60
Date:	10/18/14	Static Press. (in H ₂ O):	-0.24
Flow Traverse Time:	N/A	O ₂ (%):	~16
Run No.:	22952	CO ₂ (%):	54
Operators:	DS, AW	Duct Dia. (in):	12
Meter Box I.D.:	Haw (Cave)	B _{ext} (assumed):	0.26
Meter Y:	1.00081	Nozzle Dia. (in):	0.367
Meter Delta H@:	1.8975	K Factor:	5.58
Probe I.D./Impinger outlet I.D.:	314 / Red	Leak Check:	
Probe Length/Type:	3' Pemco	Pre:	0.002
Pitot Coeff. (Cp):	0.84	Post:	0.001

DGM Clock Time	Port/Point I.D.	Sample Time (min.)	DGM Reading (DACEF)	ΔP (in. H ₂ O)	ΔH (in. H ₂ O)	Stack Temp. (F)	Probe Temp. (°F)	Filter Temp. (°F)	Imp. Outlet Temp. (°F)	DGM Temp. (°F)	Moisture Train:		
											Initial	Final	
8:14	W-1	0	257.061	0.47	2.62	151	241	245	63	79	74	7	
		5	261.42	0.44	2.42	156	264	264	48	87	75	7	
2	10	269.80	0.43	2.40	158	264	254	48	91	77	77	7	
		15	270.13	0.43	2.40	160	256	251	50	93	78	8	
3	20	279.47	0.43	2.40	158	251	251	51	94	80	80	8	
		25	278.82	0.41	2.29	160	250	250	52	95	82	82	8
4	30	283.07	0.41	2.29	162	250	250	53	97	83	83	8	
		35	287.30	0.44	2.46	159	250	250	55	98	84	84	8
5	40	291.65	0.44	2.46	160	250	250	56	99	86	86	8	
		45	296.05	0.44	2.46	160	250	250	57	99	87	87	8
6	50	300.47	0.44	2.46	160	250	250	58	100	87	87	8	
		55	304.57	0.44	2.46	160	250	250	59	100	88	88	8
7	60	309.262	0.44	2.46	160	250	250	60	100	88	88	8	
		65	313.62	0.46	2.57	159	250	250	61	97	93	93	9
8	70	319.33	0.44	2.46	159	250	250	62	102	90	90	9	
		75	322.68	0.46	2.57	159	249	249	62	102	91	91	9
9	80	327.21	0.46	2.57	158	249	250	63	103	92	92	9	
		85	331.71	0.44	2.46	159	250	250	64	105	93	93	9
10	90	336.11	0.46	2.57	161	250	251	64	104	93	93	9	
		95	340.55	0.44	2.46	161	250	251	47	104	93	93	9
11	100	344.94	0.44	2.46	159	250	250	48	104	94	94	9	
		105	349.32	0.43	2.40	163	249	250	49	104	94	94	9
12	110	353.67	0.44	2.46	162	250	249	49	104	94	94	9	
		115	357.97	0.44	2.46	163	250	250	51	104	95	95	9
13	120	362.263											

Total Time	Vol. (DACEF)	Avg. ΔP	Avg. ΔH	Avg. t _s
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Average DGM Temp.	Max. Vac.
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Point No.	DGM Reading (acf)	Sample Volume (acf)	dP (in WC)	dP1/2 (in WC)	dH (in WC)	dH1/2 (in WC)1/2	Stack T (F)	DGM Inlet (F)	DGM Outlet (F)	DGM Ave (F)	Velocity (ft/s)	Stack Pres (in Hg)	Meter Pres. (in Hg)
1	257.061	4.359	0.47	0.686	2.62	1.619	151.0	79.0	74.0	76.5	44.4	28.58	28.79
2	261.420	8.380	0.44	0.663	2.46	1.568	156.0	87.0	75.0	81.0	43.1	28.58	28.78
3	269.800	0.330	0.43	0.656	2.40	1.549	158.0	91.0	77.0	84.0	42.7	28.58	28.78
4	270.130	4.340	0.43	0.656	2.40	1.549	160.0	93.0	78.0	85.5	42.8	28.58	28.78
5	274.470	4.350	0.43	0.656	2.40	1.549	158.0	94.0	80.0	87.0	42.7	28.58	28.78
6	278.820	4.250	0.41	0.640	2.29	1.513	160.0	95.0	82.0	88.5	41.8	28.58	28.77
7	282.070	4.230	0.41	0.640	2.29	1.513	162.0	97.0	83.0	90.0	41.8	28.58	28.77
8	287.300	4.380	0.44	0.663	2.46	1.568	159.0	98.0	84.0	91.0	43.2	28.58	28.78
9	291.680	4.400	0.44	0.663	2.46	1.568	160.0	99.0	86.0	92.5	43.3	28.58	28.78
10	296.080	4.390	0.44	0.663	2.46	1.568	160.0	99.0	87.0	93.0	43.3	28.58	28.78
11	300.470	4.400	0.44	0.663	2.46	1.568	160.0	100.0	87.0	93.5	43.3	28.58	28.78
12	304.870	4.392	0.44	0.663	2.46	1.568	160.0	100.0	88.0	94.0	43.3	28.58	28.78
13	309.262	4.358	0.44	0.663	2.46	1.568	160.0	97.0	89.0	93.0	43.3	28.58	28.78
14	313.620	4.710	0.46	0.678	2.57	1.603	159.0	101.0	90.0	95.5	44.2	28.58	28.79
15	318.330	4.350	0.44	0.663	2.46	1.568	159.0	102.0	91.0	96.5	43.2	28.58	28.78
16	322.680	4.530	0.46	0.678	2.57	1.603	159.0	102.0	91.0	96.5	44.2	28.58	28.79
17	327.210	4.500	0.46	0.678	2.57	1.603	158.0	103.0	92.0	97.5	44.2	28.58	28.79
18	331.710	4.400	0.44	0.663	2.46	1.568	159.0	105.0	92.0	98.5	43.2	28.58	28.78
19	336.110	4.440	0.46	0.678	2.57	1.603	161.0	104.0	93.0	98.5	44.3	28.58	28.79
20	340.550	4.390	0.44	0.663	2.46	1.568	161.0	104.0	93.0	98.5	43.3	28.58	28.78
21	344.940	4.380	0.44	0.663	2.46	1.568	159.0	104.0	94.0	99.0	43.2	28.58	28.78
22	349.320	4.350	0.43	0.656	2.40	1.549	163.0	104.0	94.0	99.0	42.9	28.58	28.78
23	353.670	4.300	0.44	0.663	2.46	1.568	162.0	104.0	94.0	99.0	43.3	28.58	28.78
24	357.970	4.293	0.44	0.663	2.46	1.568	163.0	104.0	95.0	99.5	43.4	28.58	28.78
25	362.263												
	105.202			0.440	0.664	2.461	1.569	159.5	98.6	87.0	92.8	43.3	28.58
													28.78

Plant = SMM - Pogo Mine
 Plant Location = Delta Junction, AK
 Source ID = Incinerator
 Run No = 129.2
 Date = 10/08/14
 Run Time = 0814-1016
 Sample Duration (min) = 120
 Point Duration (min) = 10
 Bar. Pres. (in Hg) = 28.6
 Static Pres. (in WC) = -0.24
 Nozzle Dia (in WC) = 0.3070
 Meter dH @ = 1.8975
 Meter Yd = 1.0081
 H2O Mass (ml/g) = 749.4
 Initial = 713.5
 Final = 957.1
 Change = 243.6
 Initial = 696.0
 Final = 939.1
 Change = 243.1
 Initial = 605.0
 Final = 836.6
 Change = 231.6
 Initial = 711.7
 Final = 720.5
 Change = 8.8
 Initial = 717.4
 Final = 720.5
 Change = 3.1
 Initial = 874.7
 Final = 893.9
 Change = 19.2

ISOKINETIC SAMPLE DATA FORM

Plant:	Sum - Poco	Filter ID:	B 16
Location:	Delta Junction - A/C	Ambient Temp. (°F):	84
Source I.D.:	In cinerator	Baro. Press. (in. Hg):	28.60
Date:	10/18/14	Static Press. (in Hg):	-0.23
Flow Traverse Time:	1:29:31	O ₂ (%):	~16
Run No.:	229-3	CO ₂ (%):	~4
Operators:	Di3, Aw	Duct Dia. (in):	12"
Meter Box I.D.:	Hawkeye	B _{ws} (assumed):	0.26
Meter Y:	1.0281	Nozzle Dia. (in):	0.307
Meter Delta H@:	1.6975	K Factor:	5.58
Probe I.D./ Impinger outlet I.D.:	314	Leak Check:	
Probe Length/Type:	3' (2m)	Pre:	0.002
Pilot Coeff. (Cp):	0.84	Post:	0.001

DGM Clock Time	Port/Point I.D.	Sample Time (min.)	DGM Reading (DACP)	ΔP (in. H ₂ O)	ΔH (in. H ₂ O)	Stack Temp. (F)	Probe Temp. (°F)	Filter Temp. (°F)	Imp. Outlet Temp. (°F)	DGM Temp. (°F)	Vacuum (in. Hg)
1404	W - 1	0	975.698	0.47	2.62	199	254	265	70	92	7.5
		5	980.15	0.93	2.90	157	263	252	53	93	7.5
	2	10	984.48	0.95	2.51	157	256	250	53	96	7.5
		15	988.93	0.45	2.51	155	251	250	53	99	7.5
	3	20	993.35	0.43	2.96	155	249	299	54	101	7.5
		25	997.73	0.47	2.62	159	250	250	55	102	7.5
	4	30	502.28	0.43	2.50	150	259	250	56	103	7.5
		35	506.68	0.45	2.51	158	258	250	57	104	7.5
	5	40	511.12	0.43	2.90	158	250	251	58	104	7.5
		45	515.49	0.41	2.29	161	253	251	59	105	7.5
	6	50	519.79	0.41	2.29	163	250	248	60	105	7.5
		55	529.04	0.43	2.40	162	250	250	62	106	7.5
1504/1509	N - 1	60	528.317	0.43	2.40	141	252	251	61	102	7.5
		65	532.52	0.43	2.40	160	250	249	61	105	7.5
	7	70	536.79	0.43	2.40	164	250	251	67	106	7.5
		75	540.70	0.43	2.44	164	250	251	67	106	7.5
	3	80	545.08	0.44	2.49	162	249	250	47	106	7.5
		85	548.75	0.43	2.40	162	250	250	47	106	7.5
	4	90	552.47	0.44	2.29	162	250	250	50	107	7.5
		95	556.08	0.41	2.29	158	249	250	51	107	7.5
	5	100	559.97	0.47	2.45	156	250	250	51	108	7.5
		105	564.23	0.44	2.25	155	250	250	52	108	7.5
	6	110	568.47	0.46	2.40	155	250	249	53	107	7.5
		115	572.80	0.44	2.40	155	250	250	53	107	7.5
	11609	120	577.134								

Moisture Train: #	Final	Initial	Imp.
1	928.3	714.9	714.9
2	909.8	694.7	694.7
3	914.8	606.0	606.0
4	722.7	710.5	710.5
5	730.7	718.5	718.5
	908.4	893.4	893.4

Total Time Vol. (DACP) Avg. ΔP Avg. ΔAH Avg. t_s

Average DGM Temp. Max. Vac.

SMM - Pogo Mine										Moisture			
Plant Location =										Initial	Final	Change	
Source ID =	SMM	Point Duration (min) =	10							714.9	928.3	213.4	
Run No =	129-3	Bar. Pres. (in Hg) =	28.6							694.7	909.8	215.1	
Date =	10/08/14	Static Pres. (in WC) =	-0.23							606	914.8	308.8	
Run Time =	1404-1609	Nozzle Dia (in WC) =	0.3070							710.5	722.7	12.2	
Sample Duration (min) =	120	Meter dH @ =	1.8975							718.5	739.7	21.2	
		Meter Yd =	1.0081							785.7			
		H2O Mass (ml/g) =								893.4	908.4	15.0	
			0										
Point No.	DGM Reading (acf)	Sample Volume (acf)	dP (in WC)	dP1/2 (in WC)	dH (in WC)	dH1/2 (in WC)1/2	Stack T (F)	DGM Inlet (F)	DGM Outlet (F)	DGM Ave (F)	Velocity (ft/s)	Stack Pres (in Hg)	Meter Pres. (in Hg)
1	475.648	4.502	0.470	0.686	2.62	1.619	149.0	90.0	92.0	91.0	44.5	28.58	28.79
	480.150	4.330	0.430	0.656	2.40	1.549	157.0	93.0	91.0	92.0	42.9	28.58	28.78
2	484.480	4.450	0.450	0.671	2.51	1.584	157.0	96.0	91.0	93.5	43.8	28.58	28.78
	488.930	4.420	0.450	0.671	2.51	1.584	155.0	99.0	91.0	95.0	43.8	28.58	28.78
3	492.350	4.380	0.430	0.656	2.40	1.549	155.0	101.0	92.0	96.5	42.8	28.58	28.78
	497.730	4.550	0.470	0.686	2.62	1.619	158.0	102.0	92.0	97.0	44.8	28.58	28.79
4	502.280	4.400	0.430	0.656	2.40	1.549	159.0	103.0	93.0	98.0	42.9	28.58	28.78
	506.680	4.450	0.450	0.671	2.51	1.584	158.0	104.0	94.0	99.0	43.9	28.58	28.78
5	511.130	4.360	0.430	0.656	2.40	1.549	158.0	104.0	95.0	99.5	42.9	28.58	28.78
	515.490	4.300	0.410	0.640	2.29	1.513	161.0	105.0	95.0	100.0	42.0	28.58	28.77
6	519.790	4.250	0.410	0.640	2.29	1.513	163.0	105.0	96.0	100.5	42.0	28.58	28.77
	524.040	4.130	0.430	0.656	2.40	1.549	162.0	106.0	96.0	101.0	43.0	28.58	28.78
1	528.170	4.360	0.430	0.656	2.40	1.549	161.0	102.0	97.0	99.5	43.0	28.58	28.78
	532.530	4.260	0.430	0.656	2.40	1.549	160.0	105.0	97.0	101.0	43.0	28.58	28.78
2	536.790	3.910	0.430	0.656	2.40	1.549	164.0	106.0	97.0	101.5	43.1	28.58	28.78
	540.700	4.380	0.430	0.656	2.40	1.549	164.0	106.0	97.0	101.5	43.1	28.58	28.78
3	545.080	3.670	0.440	0.663	2.29	1.513	162.0	106.0	98.0	102.0	43.5	28.58	28.77
	548.750	8.690	0.430	0.656	2.40	1.549	162.0	106.0	98.0	102.0	43.0	28.58	28.78
4	557.440	-1.360	0.440	0.663	2.29	1.513	162.0	107.0	99.0	103.0	43.5	28.58	28.77
	556.080	3.790	0.440	0.663	2.29	1.513	158.0	107.0	99.0	103.0	43.4	28.58	28.77
5	559.870	4.360	0.470	0.686	2.45	1.565	156.0	108.0	99.0	103.5	44.8	28.58	28.78
	564.230	4.240	0.440	0.663	2.29	1.513	155.0	108.0	100.0	104.0	43.3	28.58	28.77
6	568.470	4.330	0.460	0.678	2.40	1.549	155.0	107.0	100.0	103.5	44.3	28.58	28.78
	572.800	4.334	0.460	0.678	2.40	1.549	155.0	107.0	100.0	103.5	44.3	28.58	28.78
	577.134												
	101.486		0.440	0.663	2.407	1.551	158.6	103.5	95.8	99.6	43.4	28.58	28.78

SMMI - Pogo Mine										Moisture		
Plant Location =										Initial	Final	Change
Source ID =										326.1	341.9	15.8
Run No =										343.7	941.6	597.9
Date =										704.0	722.8	18.8
Run Time =										1.8975	698.5	1.6
Sample Duration (min) =										1.0081	909.0	23
Point Duration (min) =										10		
Bar. Pres. (in Hg) =										28.75		
Static Pres. (in WC) =										-0.2		
Nozzle Dia (in WC) =										0.3070		
Meter dH @ =										1.8975		
Meter Yd =										1.0081		
H2O Mass (ml/g) =										657.1		
117												
Point No.	DGM Reading (acf)	Sample Volume (acf)	dP (in WC)	dP1/2 (in WC)1/2	dH (in WC)	dH1/2 (in WC)1/2	Stack T (F)	DGM Inlet (F)	DGM Outlet (F)	DGM Ave (F)	velocity (ft/s)	Stack Pres. (in Hg)
1	102.075	4.285	0.44	0.66	2.46	1.57	139	86.0	89.0	87.5	42.2	28.74
2	106.360	4.110	0.44	0.66	2.46	1.57	144	87.0	88.0	87.5	42.4	28.74
3	110.470	4.340	0.44	0.66	2.46	1.57	150	91.0	88.0	89.5	42.6	28.74
4	114.810	4.160	0.45	0.67	2.51	1.58	151	92.0	88.0	90.0	43.1	28.74
5	118.970	4.700	0.43	0.66	2.40	1.55	153	95.0	87.0	91.0	42.2	28.74
6	123.670	4.280	0.43	0.66	2.40	1.55	155	95.0	88.0	91.5	42.3	28.74
7	127.950	4.400	0.44	0.66	2.46	1.57	155	96.0	88.0	92.0	42.8	28.74
8	132.350	4.580	0.45	0.67	2.51	1.58	155	97.0	88.0	92.5	43.3	28.74
9	136.930	4.250	0.45	0.67	2.51	1.58	154	98.0	88.0	93.0	43.2	28.74
10	141.180	4.300	0.43	0.66	2.40	1.55	161	98.0	89.0	93.5	42.5	28.74
11	145.480	4.260	0.44	0.66	2.46	1.57	159	98.0	89.0	93.5	42.9	28.74
12	149.740	4.303	0.43	0.66	2.40	1.55	160	94.0	92.0	93.0	42.5	28.74
13	154.043	4.657	0.50	0.71	2.79	1.67	151	95.0	90.0	92.5	45.5	28.74
14	158.700	4.620	0.48	0.69	2.68	1.64	145	97.0	91.0	94.0	44.3	28.74
15	163.320	4.580	0.48	0.69	2.68	1.64	150	99.0	91.0	95.0	44.5	28.74
16	167.900	4.580	0.48	0.69	2.68	1.64	150	99.0	91.0	95.0	44.5	28.74
17	172.480	4.590	0.48	0.69	2.68	1.64	148	99.0	91.0	95.0	44.4	28.74
18	177.070	4.550	0.48	0.69	2.68	1.64	152	99.0	91.0	95.0	44.6	28.74
19	181.620	4.550	0.46	0.68	2.57	1.27	153	99.0	92.0	95.5	43.7	28.74
20	186.170	4.590	0.48	0.69	2.68	1.64	160	99.0	92.0	95.5	44.9	28.74
21	190.760	4.620	0.48	0.69	2.68	1.64	158	99.0	93.0	96.0	44.8	28.74
22	195.380	4.720	0.49	0.70	2.73	1.65	157	99.0	93.0	96.0	45.2	28.74
23	200.100	4.420	0.48	0.69	2.68	1.64	159	99.0	93.0	96.0	44.8	28.74
24	204.520	1.795	0.46	0.68	2.57	1.60	160	99.0	93.0	96.0	43.9	28.74
25	206.315											
	104.240		0.46	0.68	2.56	1.59	153.3	96.21	90.13	93.17	43.64	28.93

Plant =	SMMI - Pogo Mine	Point Duration (min) =	10	Moisture									
Plant Location =	Delta Junction, AK	Bar. Pres. (in Hg) =	28.6	Initial									
Source ID =	Incinerator	Static Pres. (in WC) =	-0.24	350.8	370.8								
Run No =	123-2	Nozzle Dia (in WC) =	0.3070	344.9	893.2								
Date =	10/08/14	Meter dH @ =	1.8975	708.2	930.8								
Run Time =	1110-1323	Meter Yd =	1.0081	706.2	853.9								
Sample Duration (min) =	128	H2O Mass (ml/g) =	963.2	875.3	899.9								
			0		24.6								
Point No.	DGM Reading (acf)	Sample Volume (acf)	dP (in WC)	dP1/2 (in WC)1/2	dH (in WC)	dH1/2 (in WC)1/2	Stack T (F)	DGM Inlet (F)	DGM Outlet (F)	DGM Ave (F)	velocity (ft/s)	Stack Pres (in Hg)	Meter Pres. (in Hg)
1	362.584	4.266	0.450	0.67	2.51	1.58	153.0	40.0	94.0	93.0	43.3	28.58	28.78
2	371.020	4.300	0.410	0.64	2.29	1.51	160.0	47.0	99.0	93.0	41.6	28.58	28.77
3	375.320	4.290	0.410	0.64	2.29	1.51	167.0	52.0	102.0	93.0	41.8	28.58	28.77
4	379.610	10.370	0.410	0.64	2.29	1.51	168.0	55.0	104.0	94.0	41.9	28.58	28.77
5	389.980	-1.710	0.420	0.65	2.34	1.53	166.0	56.0	104.0	94.0	41.8	28.58	28.77
6	388.270	4.380	0.420	0.65	2.34	1.53	165.0	58.0	105.0	95.0	42.3	28.58	28.77
	392.650	4.890	0.450	0.67	2.51	1.58	161.0	59.0	105.0	95.0	43.6	28.58	28.78
	397.540	3.990	0.410	0.64	2.29	1.51	163.0	60.0	105.0	96.0	41.7	28.58	28.77
	401.530	3.290	0.390	0.62	2.18	1.48	168.0	61.0	105.0	96.0	40.8	28.58	28.76
	404.820	5.070	0.390	0.62	2.18	1.48	168.0	62.0	105.0	97.0	40.8	28.58	28.76
	409.890	4.185	0.390	0.62	2.18	1.48	168.0	62.0	105.0	97.0	40.8	28.58	28.76
1	414.075	4.415	0.450	0.67	2.51	1.58	158.0	63.0	101.0	96.0	43.5	28.58	28.78
2	423.070	4.570	0.470	0.69	2.62	1.62	164.0	63.0	103.0	96.0	44.7	28.58	28.79
3	427.640	4.530	0.460	0.68	2.57	1.60	166.0	65.0	104.0	96.0	44.7	28.58	28.79
4	432.170	4.520	0.460	0.68	2.57	1.60	163.0	66.0	104.0	96.0	44.7	28.58	28.79
5	436.690	4.690	0.470	0.69	2.62	1.62	163.0	64.0	103.0	96.0	44.6	28.58	28.79
6	441.380	4.380	0.450	0.67	2.51	1.58	165.0	64.0	104.0	96.0	44.3	28.58	28.79
	445.760	4.460	0.430	0.66	2.40	1.55	166.0	67.0	104.0	96.0	42.8	28.58	28.78
	450.220	4.530	0.460	0.68	2.57	1.60	166.0	68.0	104.0	96.0	44.3	28.58	28.79
	454.750	4.600	0.470	0.69	2.62	1.62	166.0	68.0	104.0	96.0	44.7	28.58	28.79
	459.350	4.490	0.450	0.67	2.51	1.58	165.0	68.0	104.0	96.0	43.8	28.58	28.78
	463.840	4.460	0.460	0.68	2.57	1.60	167.0	68.0	104.0	97.0	44.4	28.58	28.79
	468.300	4.480	0.460	0.678	2.57	1.60	169.0	68.0	104.0	97.0	44.4	28.58	28.79
	472.780	2.698	0.460	0.678	2.57	1.60	170.0	69.0	104.0	97.0	37.9	28.58	28.79
	475.478												
	112.894		0.44	0.66	2.44	1.56	164.88	61.35	103.38	95.58	42.87	28.58	28.78

ISOKINETIC SAMPLE DATA FORM

Plant:	5mm - Poso	Filter ID:	D/F - 3
Location:	Delta Junction, AK	Ambient Temp. (°F):	77
Source I.D.:	Inciator	Baro. Press. (in. Hg):	28.30
Date:	10/9/14	Static Press. (in H ₂ O):	-0.72
Flow Traverse Time:	NA	O ₂ (%):	~16
Run No.:	I23-3	CO ₂ (%):	~4
Operators:	DB, AW	Duct Dia. (in):	12"
Meter Box I.D.:	Hawkeye	B _{ass} (assumed):	0.32
Meter Y:	10381	Nozzle Dia. (in):	0.307
Meter Delta H@:	1.8975	K Factor:	5.58
Probe I.D./Impinger outlet I.D.:	3141-yeKew	Leak Check:	5.22
Probe Length/Type:	2m5	Pre:	0.001
Pilot Coeff. (Cp):	0.84	Post:	0.001
		acf	10
		acf	13
		in. Hg Vac.	in. Hg Vac.

DGM Clock Time	Port/Point I.D.	Sample Time (min.)	DGM Reading (DACE)	ΔP (in. H ₂ O) avg	ΔH (in. H ₂ O)	Stack Temp. (F)	Probe Temp. (F)	Filter Temp. (F)	DGM Temp. (°F)	Moisture Train #1		
										Imp. Initial	Final	in. H ₂ O/15 sec.
0629	W-1	0	633.315	2.69	148	250	256	75	72	91	9.5	
		5	637.57	0.49	269	151	248	250	50	74	73	
	2	10	642.12	0.49	2169	154	248	249	49	77	73	11
		15	646.7	0.47	257	154	250	248	51	81	74	11
		20	651.17	0.5	273	153	230	254	52	85	73	11
		25	655.73	0.47	259	155	230	250	53	87	76	11
		30	660.21	0.45	235	159	250	250	54	89	83	11
		35	664.48	0.45	235	160	250	249	54	91	79	11
		40	668.95	0.45	235	159	250	249	56	92	80	10
		45	673.03	0.45	235	159	250	250	57	93	81	10
		50	678.32	0.43	224	160	250	250	58	95	82	10
		55	681.74	0.45	235	159	251	250	56	95	83	10
		60	685.945	0.56	292	156	252	252	54	93	84	11.5
		65	690.44	0.47	245	158	250	248	44	96	86	
		70	694.85	0.50	261	158	249	248	45	97	89	11.5
		75	699.42	0.50	261	159	250	248	48	99	88	12
		80	703.99	0.48	251	161	250	250	48	99	88	12
		85	708.50	0.50	261	160	250	249	49	100	89	12
		90	713.09	0.48	251	159	250	250	49	101	90	12
		95	717.61	0.50	261	158	250	251	50	101	90	12
		100	722.18	0.49	254	160	250	249	50	101	91	12
		105	726.71	0.50	261	159	250	250	50	102	91	12
		110	730.28	0.50	261	157	250	250	50	102	92	12
		115	735.83	0.50	261	160	249	249	51	102	92	12.5
		120	740.30	0.48	251	160	250	249	52	102	93	12.5
		125	744.73	0.50	261	160	250	250	53	102	93	12.5
		130	748.26	0								

Total Time	Vol. (DACE)	Avg. ΔP	Avg. ΔH	Avg. t _s
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Average DGM Temp.			Max. Vac.
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Plant = SMMI - Pogo Mine
 Plant Location = Delta Junction, AK
 Source ID = Incinerator
 Run No = 123-3
 Date = 10/09/14
 Run Time = 0829-1044
 Sample Duration (min) = 130

Point Duration (min) = 10
 Bar. Pres. (in Hg) = 28.3
 Static Pres. (in WC) = -0.22
 Nozzle Dia (in WC) = 0.3070
 Meter dH @ = 1.8975
 Meter Yd = 1.0081
 H2O Mass (ml/g) = 785.0

Moisture = 22.9
 Initial = 323.6
 Final = 339.6
 Change = 16
 Bar. Pres. (in Hg) = 344.5
 Static Pres. (in WC) = 924.9
 Nozzle Dia (in WC) = 580.4

Point No.	DGM Reading (acf)	Sample Volume (acf)	dP (in WC)	dP1/2 (in WC)	dH (in WC)	dH1/2 (in WC)1/2	Stack T (F)	DGM Inlet (F)	DGM Outlet (F)	DGM Ave (F)	velocity (ft/s)	Stack Pres (in Hg)	Meter Pres. (in Hg)
1	633.315	4.255	0.490	0.70	2.69	1.64	148.0	72.0	71.0	71.5	45.3	28.28	28.50
	637.570	4.550	0.490	0.70	2.69	1.64	151.0	74.0	73.0	73.5	45.4	28.28	28.50
2	642.120	4.580	0.490	0.70	2.69	1.64	154.0	77.0	73.0	75.0	45.5	28.28	28.50
	646.700	4.470	0.470	0.69	2.59	1.61	154.0	81.0	74.0	77.5	44.5	28.28	28.49
3	651.170	4.560	0.500	0.71	2.75	1.66	153.0	85.0	75.0	80.0	45.9	28.28	28.50
	655.730	4.480	0.470	0.69	2.59	1.61	155.0	87.0	76.0	81.5	44.6	28.28	28.49
4	660.210	4.270	0.450	0.67	2.35	1.53	159.0	89.0	83.0	86.0	43.8	28.28	28.47
	664.480	5.470	0.450	0.67	2.35	1.53	160.0	91.0	79.0	85.0	43.8	28.28	28.47
5	669.950	3.080	0.450	0.67	2.35	1.53	159.0	92.0	80.0	86.0	43.8	28.28	28.47
	673.030	5.290	0.450	0.67	2.35	1.53	159.0	93.0	81.0	87.0	43.8	28.28	28.47
6	678.320	3.420	0.430	0.66	2.24	1.50	160.0	95.0	82.0	88.5	42.8	28.28	28.46
	681.740	4.205	0.450	0.67	2.35	1.53	159.0	95.0	83.0	89.0	43.8	28.28	28.47
1	685.945	4.495	0.560	0.75	2.92	1.71	156.0	93.0	84.0	88.5	48.7	28.28	28.51
	690.440	4.410	0.470	0.69	2.45	1.57	158.0	96.0	86.0	91.0	44.7	28.28	28.48
2	694.850	4.570	0.500	0.71	2.61	1.62	158.0	97.0	86.0	91.5	46.1	28.28	28.49
	699.420	4.570	0.500	0.71	2.61	1.62	159.0	99.0	88.0	93.5	46.1	28.28	28.49
3	703.990	4.510	0.480	0.69	2.51	1.58	161.0	99.0	88.0	93.5	45.3	28.28	28.48
	708.500	4.590	0.500	0.71	2.61	1.62	160.0	100.0	89.0	94.5	46.2	28.28	28.49
4	713.090	4.520	0.480	0.69	2.51	1.58	159.0	101.0	90.0	95.5	45.2	28.28	28.48
	717.610	4.570	0.500	0.71	2.61	1.62	158.0	101.0	90.0	95.5	46.1	28.28	28.49
5	722.180	4.530	0.490	0.70	2.96	1.72	160.0	101.0	91.0	96.0	45.7	28.28	28.52
	726.710	4.570	0.500	0.71	2.61	1.62	159.0	102.0	91.0	96.5	46.1	28.28	28.49
6	731.280	4.550	0.500	0.71	2.61	1.62	157.0	102.0	92.0	97.0	46.1	28.28	28.49
	735.830	4.470	0.500	0.71	2.61	1.62	160.0	102.0	92.0	97.0	46.2	28.28	28.49
	740.300	4.430	0.480	0.69	2.51	1.58	160.0	102.0	93.0	97.5	45.2	28.28	28.48
	744.730	4.566	0.500	0.71	2.61	1.62	160.0	102.0	93.0	97.5	46.2	28.28	28.49
	749.296												
	115.981		0.483	0.69	2.57	1.60	157.54	93.38	83.96	88.67	45.25	28.28	28.49

RM 4 Moisture Gravimetric Form

SLR

HCL

Cold Box # 4 Run # I5-1
3612.6 4003.7

Imp.	Initial	Final
1	700.9	949.9
2	680.6	801.1
3	702.5	711.3
4	686.3	689.2
5	842.3	852.2
Net Gain		391.1

Cold Box # 4 Run # I5-2

Imp.	Initial	Final
1	724.1	936.1
2	663.1	788.4
3	692.4	699.5
4	697.4	699.7
5	852.2	859.6
Net Gain		

Cold Box # 4 Run # I5-3

Imp.	Initial	Final
1	706.2	936.0
2	685.4	823.7
3	702.9	711.3
4	687.8	689.9
5	878.8	889.8
Net Gain		

RM 29

Cold Box # 2 Run # I29-1
4300.7 5076.7

Imp.	Initial	Final
1	709.0	946.1
2	688.0	905.3
3	600.7	894.3
4	707.8	713.6
5	715.9	718.7
	879.3	898.7
Net Gain		776

Cold Box # 2 Run # I29-2

Imp.	Initial	Final
1	713.5	957.1
2	696.0	939.1
3	605.0	836.6
4	711.7	718.0
5	717.4	720.5
	874.7	893.9
Net Gain		

Cold Box # 2 Run # I29-3

Imp.	Initial	Final
1	714.9	928.3
2	694.7	908.8
3	606.0	914.8
4	710.5	722.7
5	718.5	739.7
	893.4	908.4
Net Gain		

D/F

Cold Box # 1 Run # I23-1Cold Box # 1 Run # I23-2Cold Box # 1 Run # I23-3

Imp.	Initial	Final
1	326.1	341.9
2	343.7	941.6
3	704.0	722.8
4		
5	696.9	698.5
	886.0	909.0
Net Gain		

Trap T2055-001

Imp.	Initial	Final
1	350.8	370.8
2	344.9	893.2
3	708.2	930.8
4	706.2	853.9
5	875.3	899.9
Net Gain		

Trap T2055-003

Imp.	Initial	Final
1	323.6	339.6
2	344.5	924.9
3	707.2	872.4
4	701.2	701.7
5	873.2	896.1
Net Gain		

HCL (Particulate)

Cold Box # 4 Run # _____

Cold Box # _____ Run # _____

Cold Box # _____ Run # _____

Imp.	Initial	Final
1	705.7	932.2
2	685.1	807.5
3	703.3	711.5
4	690.2	692.8
5	688.3	899.9
Net Gain		

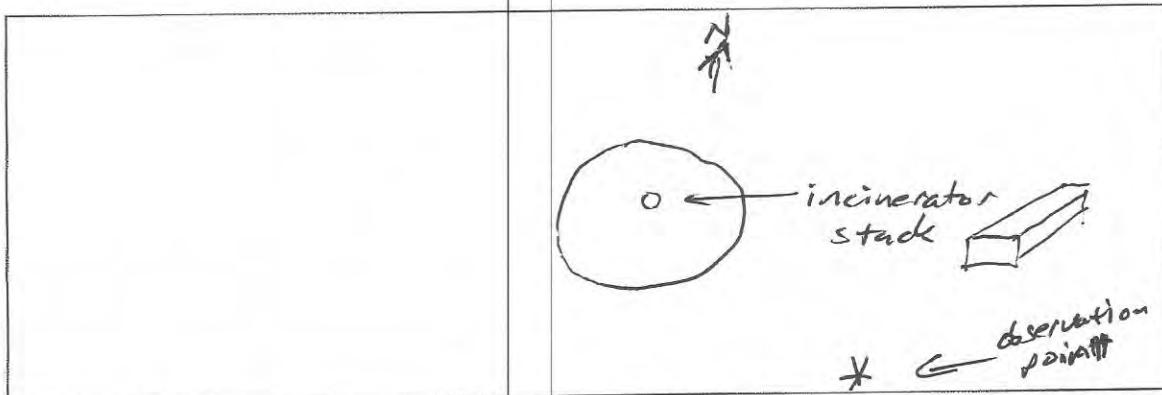
Imp.	Initial	Final
1		
2		
3		
4		
5		
Net Gain		

Imp.	Initial	Final
1		
2		
3		
4		
5		
Net Gain		

FUGITIVE OR SMOKE EMISSION INSPECTION
OUTDOOR LOCATION

Company <i>Pogo Mine</i> Location <i>Delta Junction, AK</i> Company Rep. <i>Ben Farnam</i>	Observer <i>John Rosburg</i> Affiliation <i>SLR</i> Date <i>10/08/14</i>
Sky Conditions <i>overcast</i>	Wind Direction <i>west</i>
Precipitation <i>zero</i>	Wind Speed <i>calm > 5 mph</i>
Industry <i>Gold Mine Incinerator</i>	Process Unit <i>Ash Bin, Incinerator Stack</i>

Sketch process unit: indicate observer position relative to source; indicate potential emission points and/or actual emission points.



OBSERVATIONS	Clock Time	Observation period duration, minutes:seconds	Accumulated emission time, minutes:seconds
Begin Observation	<u>0830</u>		
To complete this form, record the following:			
• the initial clock time			
• the total time of the observation (from SW1)			
• the total time of emissions (from SW2), and			
• the final clock time.			
For more details on recording this data and taking breaks, see #7 and #10 above.			
End Observation	<u>0930</u>	<u>60:00</u>	<u>0:00</u>

FUGITIVE OR SMOKE EMISSION INSPECTION OUTDOOR LOCATION			
Company <i>Pogo Mine</i> Location <i>Delta Junction, AK</i> Company Rep. <i>Ben Farnam</i>	Observer <i>John Rosburg</i> Affiliation <i>SLR</i> Date <i>10/08/17</i>		
Sky Conditions <i>overcast</i> Precipitation <i>zero</i> Industry	Wind Direction <i>west</i> Wind Speed <i>calm <5 mph</i> Process Unit		
<i>Gold Mine Incinerator</i>	<i>Ash Bin, Incinerator Stack</i>		
Sketch process unit: indicate observer position relative to source; indicate potential emission points and/or actual emission points.			
OBSERVATIONS	Clock Time	Observation period duration, minutes:seconds	Accumulated emission time, minutes:seconds
Begin Observation	<i>1115</i>		
To complete this form, record the following:			
• the initial clock time			
• the total time of the observation (from SW1)			
• the total time of emissions (from SW2), and			
• the final clock time.			
For more details on recording this data and taking breaks, see #7 and #10 above.			
End Observation	<i>1215</i>	<i>60:00</i>	<i>0:00</i>

FUGITIVE OR SMOKE EMISSION INSPECTION OUTDOOR LOCATION			
Company <i>Pogo Mine</i> Location <i>Delta Junction, AK</i> Company Rep. <i>Ben Farnam</i>	Observer <i>John Rosburg</i> Affiliation <i>SLR</i> Date <i>10/03/14</i>		
Sky Conditions <i>overcast</i>	Wind Direction <i>west</i>		
Precipitation <i>zero</i>	Wind Speed <i>calm <5 mph</i>		
Industry <i>Gold Mine Incinerator</i>	Process Unit <i>Ash Bin, Incinerator Stack</i>		
Sketch process unit: indicate observer position relative to source; indicate potential emission points and/or actual emission points.			
OBSERVATIONS	Clock Time	Observation period duration, minutes:seconds	Accumulated emission time, minutes:seconds
Begin Observation	<i>1415</i>		
To complete this form, record the following: <ul style="list-style-type: none"> • the initial clock time • the total time of the observation (from SW1) • the total time of emissions (from SW2), and • the final clock time. For more details on recording this data and taking breaks, see #7 and #10 above.			
End Observation	<i>1515</i>	<i>60:00</i>	<i>0:00</i>

APPENDIX B

LABORATORY RESULTS

Unit 412 CISWI Test Report
Sumitomo Metal Mining Pogo LLC
3204 International Street
Fairbanks, Alaska 99701

December 2014

Particulate Blank Gravimetric Data Form

Client: <u>SMM - Pogo Mine</u> Location: <u>Delta Junction, AK</u> Sample Location: <u>Lab</u> Run Number: <u>blank</u>	Sample Identification-Rinse: <u>Yes</u> Liquid Level Marked - Rinse: <u>Yes</u> Sample Identification-Filter: <u>Yes</u> Petri Dish Sealed-Filter: <u>Yes</u>
Probe Wash Blank	
Beaker I.D.: <u>12</u> Blank Volume (Va): <u>100</u> ml	Rinse Density (d): <u>784.8</u> mg/ml Rinse Mass: <u>78,480</u> mg
Date & Time: <u>10/20/14 0931-0934</u> Date & Time: <u>10/20/14 1549-1552</u>	Beaker Final Weight: <u>1.8971</u> g Beaker Final Mass: <u>1.8972</u> g
Date & Time: <u>10/1/14 1405-1412</u> Date & Time: <u>10/2/14 0838-0846</u>	Average Beaker Final Mass: <u>1.8972</u> g Beaker Tare: <u>1.8973</u> g Beaker Tare: <u>1.8972</u> g
0.001% of Rinse Mass: <u>0.8</u> mg	Average Beaker Tare: <u>1.8973</u> g Blank Residue Mass Gain (Mab): <u>-0.1</u> mg Percent Mab of Rinse Mass: <u>-0.0001</u> %
Blank Concentration Used For Samples (Ca) = <u>0.00000</u> mg/mg *	
<small>* In no case shall a blank value greater than 0.001% of the rinse mass be subtracted from the sample mass gain.</small>	
Filter Blank	
Filter I.D.: <u>B20</u>	Filter Final Mass: <u>0.3916</u> g Filter Final Mass: <u>0.3914</u> g
Date & Time: <u>10/20/14 0934-0938</u> Date & Time: <u>10/20/14 1552-1558</u>	Average Filter Final Mass: <u>0.3915</u> g Filter Tare: <u>0.3914</u> g
Date & Time: <u>9/18/14 1451-1505</u> Date & Time: <u>9/22/14 1326-1345</u>	Filter Tare: <u>0.3916</u> g Average Filter Tare: <u>0.3915</u> g Filter Blank Mass Gain: <u>0.0</u> mg
Blank Filter Mass Gain = <u>0.0</u> mg **	
<small>** In no case should a blank filter mass gain be subtracted from the sample weight.</small>	
<u>Remarks:</u> <hr/> <hr/> <hr/>	
Signature of Analyst: <u>DJB</u>	Signature of Reviewer: <u>John S. Resburg</u>

Particulate Sample Gravimetric Data Form

Client: SMM - Pogo Mine
Location: Delta Junction, AK
Sample Location: Incinerator
Run Number: 15-1

Sample Identification-Probe Wash: Yes
Liquid Level Marked - Probe Wash: Yes
Sample Identification-Filter: Yes
Petri Dish Sealed-Filter: Yes

Sample Probe Wash

Beaker I.D.: 8
Density of Rinse (d): 784.8 mg/ml

Blank Mass Concentration (Ca): 0.00000 mg/mg
Sample Volume (Va): 109 ml

Date & Time: 10/20/14 0931-0934
Date & Time: 10/20/14 1549-1552

Date & Time: 10/1/14 1405-1412
Date & Time: 10/2/14 0838-0846

Beaker Final Weight: 1.8538 g
Beaker Final Weight: 1.8538 g
Average Beaker Final Weight: 1.8538 g
Beaker Tare: 1.8520 g
Beaker Tare: 1.8521 g
Average Beaker Tare: 1.8521 g
Blank Residue Weight (Wa): 0.0 mg
Mass of Residue (Ma): 1.7 mg

Rinse Mass Gain = 1.7 mg

Sample Filter

Filter I.D.: B12

Date & Time: 10/20/14 0934-0938
Date & Time: 10/20/14 1552-1558

Date & Time: 9/18/14 1451-1505
Date & Time: 9/22/14 1326-1345

Filter Final Weight: 0.4118 g
Filter Final Weight: 0.4119 g
Average Filter Final Weight: 0.4119 g
Filter Tare: 0.3836 g
Filter Tare: 0.3838 g
Average Filter Tare: 0.3837 g
Filter Mass Gain: 28.2 mg

Filter Mass Gain = 28.2 mg

Remarks:

Signature of Analyst: 

Signature of Reviewer: 

Particulate Sample Gravimetric Data Form

Client: SMM - Pogo Mine	Sample Identification-Probe Wash: Yes
Location: Delta Junction, AK	Liquid Level Marked - Probe Wash: Yes
Sample Location: Incinerator	Sample Identification-Filter: Yes
Run Number: 15-2	Petri Dish Sealed-Filter: Yes
 Sample Probe Wash Beaker I.D.: <u>9</u> Density of Rinse (d): <u>784.8</u> mg/ml Date & Time: <u>10/20/14 0931-0934</u> Date & Time: <u>10/20/14 1549-1552</u> Date & Time: <u>10/1/14 1405-1412</u> Date & Time: <u>10/2/14 0838-0846</u>	
Blank Mass Concentration (Ca): <u>0.00000</u> mg/mg Sample Volume (Va): <u>108</u> ml Beaker Final Weight: <u>1.8781</u> g Beaker Final Weight: <u>1.8781</u> g Average Beaker Final Weight: <u>1.8781</u> g Beaker Tare: <u>1.8772</u> g Beaker Tare: <u>1.8771</u> g Average Beaker Tare: <u>1.8772</u> g Blank Residue Weight (Wa): <u>0.0</u> mg Mass of Residue (Ma): <u>1.0</u> mg	
 Rinse Mass Gain = <u>1.0</u> mg	
 Sample Filter Filter I.D.: <u>B14</u> Date & Time: <u>10/20/14 0934-0938</u> Date & Time: <u>10/20/14 1552-1558</u> Date & Time: <u>9/18/14 1451-1505</u> Date & Time: <u>9/22/14 1326-1345</u>	
Filter Final Weight: <u>0.4209</u> g Filter Final Weight: <u>0.4211</u> g Average Filter Final Weight: <u>0.4210</u> g Filter Tare: <u>0.3888</u> g Filter Tare: <u>0.3891</u> g Average Filter Tare: <u>0.3890</u> g Filter Mass Gain: <u>32.1</u> mg	
 Filter Mass Gain = <u>32.1</u> mg	
 Remarks: <hr/> <hr/>	
Signature of Analyst: <u>DJB</u>	Signature of Reviewer: <u>John D. Resburg</u>

Particulate Sample Gravimetric Data Form

Client: SMM - Pogo Mine
Location: Delta Junction, AK
Sample Location: Incinerator
Run Number: 15-3

Sample Identification-Probe Wash: Yes
Liquid Level Marked - Probe Wash: Yes
Sample Identification-Filter: Yes
Petri Dish Sealed-Filter: Yes

Sample Probe Wash

Beaker I.D.: 10
Density of Rinse (d): 784.8 mg/ml

Blank Mass Concentration (Ca): 0.00000 mg/mg
Sample Volume (Va): 113 ml

Date & Time: 10/20/14 0931-0934
Date & Time: 10/20/14 1549-1552

Beaker Final Weight: 1.8788 g
Beaker Final Weight: 1.8788 g

Date & Time: 10/1/14 1405-1412
Date & Time: 10/2/14 0838-0846

Average Beaker Final Weight: 1.8788 g
Beaker Tare: 1.8767 g
Beaker Tare: 1.8767 g

Average Beaker Tare: 1.8767 g
Blank Residue Weight (Wa): 0.0 mg
Mass of Residue (Ma): 2.1 mg

Rinse Mass Gain = 2.1 mg

Sample Filter

Filter I.D.: B17

Date & Time: 10/20/14 0934-0938
Date & Time: 10/20/14 1552-1558

Filter Final Weight: 0.4054 g
Filter Final Weight: 0.4057 g

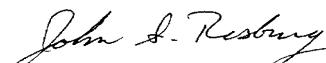
Date & Time: 9/18/14 1451-1505
Date & Time: 9/22/14 1326-1345

Average Filter Final Weight: 0.4056 g
Filter Tare: 0.3762 g
Filter Tare: 0.3765 g

Average Filter Tare: 0.3764 g
Filter Mass Gain: 29.2 mg

Filter Mass Gain = 29.2 mg

Remarks:

Signature of Analyst:  Signature of Reviewer: 

Particulate Sample Gravimetric Data Form

Client: SMM - Pogo Mine
Location: Delta Junction, AK
Sample Location: Incinerator
Run Number: 15-4

Sample Identification-Probe Wash: Yes
Liquid Level Marked - Probe Wash: Yes
Sample Identification-Filter: Yes
Petri Dish Sealed-Filter: Yes

Sample Probe Wash

Beaker I.D.: 11
Density of Rinse (d): 784.8 mg/ml

Blank Mass Concentration (Ca): 0.00000 mg/mg
Sample Volume (Va): 106 ml

Date & Time: 10/20/14 0931-0934
Date & Time: 10/20/14 1549-1552

Beaker Final Weight: 1.8968 g
Beaker Final Weight: 1.8969 g

Date & Time: 10/1/14 1405-1412
Date & Time: 10/2/14 0838-0846

Average Beaker Final Weight: 1.8969 g
Beaker Tare: 1.8961 g
Beaker Tare: 1.8961 g

Average Beaker Tare: 1.8961 g
Blank Residue Weight (Wa): 0.0 mg
Mass of Residue (Ma): 0.8 mg

Rinse Mass Gain = 0.8 mg

Sample Filter

Filter I.D.: B18

Date & Time: 10/20/14 0934-0938
Date & Time: 10/20/14 1552-1558

Filter Final Weight: 0.4337 g
Filter Final Weight: 0.4339 g

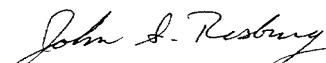
Date & Time: 9/18/14 1451-1505
Date & Time: 9/22/14 1326-1345

Average Filter Final Weight: 0.4338 g
Filter Tare: 0.4008 g
Filter Tare: 0.4011 g

Average Filter Tare: 0.4010 g
Filter Mass Gain: 32.8 mg

Filter Mass Gain = 32.8 mg

Remarks:

Signature of Analyst:  Signature of Reviewer: 

GRAVIMETRIC DATA FORM

CLIENT Sumitomo Metals Mining LLC

Location Pogo Mine - Delta Junction, AK

Probe Wash

Filter ID	Run Number	Date	Time	Tare (1)	Date	Time	Tare(2)	Date	Time	Final (1)	Date	Time	Final(2)	Vol. (ml)
B12	I5-1	9/18/2014	1451	0.3836	9/22/2014	1326	0.3838	10/20/2014	0934	0.4118	10/20/2014	1552	0.4119	
B13				0.4008			0.4009							
B14	I5-2			0.3888			0.3891				0.4209			0.4211
B15				0.3872			0.3869							
B16				0.3893			0.3896							
B17	I5-3			0.3762			0.3765				0.4054			0.4057
B18	I5-4			0.4008			0.4011				0.4337			0.4339
B19				0.3965			0.3967							
B20	Blank			0.3914			0.3916				0.3916			0.3914
A14				0.4003			0.4005							
A15				0.3938			0.3936							
A16				0.4206			0.4205							
A17				0.3954			0.3955							
A18				0.3965			0.3968							
A19				0.3839			0.3841							
A20				1505	0.4032	1345	0.4032							

Tin ID

Tin ID	Run Number	Date	Time	Tare (1)	Date	Time	Tare(2)	Date	Time	Final (1)	Date	Time	Final(2)	Vol. (ml)
8	I5-1	10/1/2014	1405	1.8520	10/2/2014	0838	1.8521	10/20/2014	0931	1.8538	10/20/2014	1549	1.8538	109
9	I5-2			1.8772			1.8771				1.8781			1.8781
10	I5-3			1.8767			1.8767				1.8788			1.8788
11	I5-4			1.8961			1.8961				1.8968			1.8968
12	blank			1.8973			1.8972				0934	1.8971		1.8972
13				1.8967			1.8967							
14				1412	1.8805		0846				1.8804			



FINAL LAB REPORT

Prepared by

SGS NORTH AMERICA

Prepared for

This report is approved by

This document is issued by the Company under its General Conditions of Service accessible at http://www.sgs.com/terms_and_conditions.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

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21 OCTOBER 2014

**JOHN ROSBURG
SLR INTERNATIONAL CORP.**

20325 Moss Bend Court
Lutz, FL 33558
t. 970 420 0602
e. jrosburg@slrconsulting.com

SUBJECT: CERTIFICATE OF RESULTS

Dear John;

Attached to this narrative are the analytical results for sample(s) submitted for the determination of polychlorinated dibenzo-p-dioxins and polychlorinated dibenzofurans. The insert below summarizes information about the project. If applicable, QC annotations below highlight specific analytical observations and assessments made during the sample handling and data interpretation phases.

Results reported relate only to the items tested.

PROJECT INFORMATION SUMMARY (*When applicable, see QC Annotations for details*)

Client Project	Pogo
SGS Project #	A7224
Analytical Protocol(s)	Method 23
No. Samples Submitted	4
Additional QC Sample(s)	0
No. Laboratory Method Blanks	1
No. OPRs / Batch CS3	1
Date Received	13-Oct-14
Condition Received	good
Temperature upon Receipt (°C)	22 (traps and filters), 19 (solvents)
Extraction within Holding Time	yes
Analysis within Holding Time	yes



QC ANNOTATIONS:

1. Please see Appendices attached for data qualifier/attribute and lab identifier descriptions which may be contained in the project.

SGS remains committed to serving you in the most effective manner. Should you have any questions or need additional information and technical support, please do not hesitate to contact us.

The management and staff of SGS welcomes customer feedback, both positive and negative, as we continually improve our services. Please visit our web site at www.sgs.com/ultratrace and click on the 'Email Us' link or go to our survey [here](#). Thank you for choosing SGS.

All services are rendered in accordance with the applicable SGS General Conditions of Service accessible via:
http://www.sgs.com/terms_and_conditions.htm.

Sincerely,

A handwritten signature in black ink, appearing to read "Amy J. Boehm". It is written in a cursive, flowing style with a horizontal line extending from the end of the signature.

Amy J. Boehm
Senior Project Manager

APPENDIX A: GENERAL DATA QUALIFIERS / DATA ATTRIBUTES

B	The analyte was found in the method blank, at a concentration that was at least 10% of the concentration in the sample.
C	Two or more congeners co-elute. In EDDs, C denotes the lowest IUPAC congener in a co-elution group and additional co-eluters for the group are shown with the number of the lowest IUPAC co-eluter.
E	The reported concentration exceeds the calibration range (upper point of the calibration curve) and is an estimated value.
EMPC	Represents an Estimated Maximum Possible Concentration. EMPCs arise in cases where the signal/noise ratio is not sufficient for peak identification (the determined ion-abundance ratio is outside the allowed theoretical range), or where there is a co-eluting interference.
H/h	If the standard recovery is below the method or SOP specified value "H" is assigned. If the obtained value is less than half the specified value "h" is assigned.
J	Indicates that an analyte has a concentration below the reporting limit (lowest point of the calibration curve) and is an estimated value.
ND	Indicates a non-detect.
NR or R	Indicates a value that is not reportable.
PR	Due to interference, the associated congener is poorly resolved.
QI	Indicates the presence of a quantitative interference.
SI	Denotes "Single Ion Mode" and is utilized for PCBs where the secondary ion trace has a significantly elevated noise level due to background PFK. Responses for such peaks are calculated using an EMPC approach based solely on the primary ion area(s) and may be considered estimates.
U	The analyte was not detected. The estimated detection limit (EDL) may be reported for this analyte.
V	The labeled standard recovery was found to be outside of the method control limits.

APPENDIX B: DRBC/TMDL SPECIFIC DATA QUALIFIERS / DATA ATTRIBUTES

J	The reported result is an estimate. The value is less than the minimum calibration level but greater than the estimated detection limit (EDL).
U	The analyte was not detected in the sample at the estimated detection limit (EDL).
E	The reported concentration is an estimate. The value exceeds the upper calibration range (upper point of the calibration curve).
D	Dilution Data. Result was obtained from the analysis of a dilution.
B	Analyte found in the sample and associated method blank.
C	Co-eluting congener
Cxx	Co-elutes with the indicated congener, data is reported under the lowest IUPAC congener. 'Xx' denotes the IUPAC number with the lowest numerical designated congener.
NR	Analyte is not reportable because of problems in sample preparation or analysis.
V	Labeled standard recovery is not within method control limits.
X	Results from re-injection/repeat/second-column analysis.
EMPC	Estimated maximum possible concentration. Indicates that a peak is identified but did not meet the method specified ion-abundance ratio.

APPENDIX C: LAB IDENTIFIERS

AR	Indicates use of the archived portion of the sample extract.
CU	Indicates a sample that required additional clean-up prior to MS injection/processing.
D	Indicates a dilution of the sample extract. The number that follows the "D" indicates the dilution factor.
DE	Indicates a dilution performed with the addition of ES (extraction standard) solution.
DUP	Designation for a duplicate sample.
MS	Designation for a matrix spike.
MSD	Designation for a matrix spike duplicate.
RJ	Indicates a reinjection of the sample extract.
S	Indicates a sample split. The number that follows the "S" indicates the split factor.



SGS CERTIFICATIONS

Arkansas	88-0682
California (ELAP)	Interim ELAP Cert #2914
CLIA	34D1013708
Connecticut	PH-0258
USDA Soil Permit	P330-14-00135
DoD	2726.01
Florida (Primary NELAP)	E87634
ISO 17025/IEC	2726.01
Louisiana	4115
Maine	#2014020
Massachusetts	M-NC919
Minnesota (Primary NELAP For Method 23)	Lab #037-999-459 Cert #688823
New Jersey	NC100
New York	11685
North Carolina DWR	481
North Dakota	R-197
Oregon	NC200002
Pennsylvania	68-03675
South Carolina	Lab #99029 Cert #99029002
Texas	T104704260-13-5
US Coast Guard	16714/159.317/SGS
Virginia	Lab #460214 Cert #3006
Washington	C913
West Virginia	293

A7224 - TEQ

Project ID: Pogo

Sample Summary

Part 1



Method 23

Analyte	Method Blank A7224_12644	I23-Blank	I23-1	I23-2	I23-3
	pg	pg	pg	pg	pg
2,3,7,8-TCDD	(1.32)	(0.732)	14.5	20.7	14.1
1,2,3,7,8-PeCDD	(1.56)	(0.945)	31	49	30.9
1,2,3,4,7,8-HxCDD	(1.17)	(0.733)	10.5	15.3	10.8
1,2,3,6,7,8-HxCDD	(1.24)	(0.795)	22.5	34.8	24.2
1,2,3,7,8,9-HxCDD	[1.57]	1.56	16.8	24.3	17.1
1,2,3,4,6,7,8-HpCDD	2.27	6.06	40.2	48.9	39.7
OCDD	[9.7]	15.3	33.5	29.6	26
2,3,7,8-TCDF	(0.91)	(0.644)	84.3	135	88
1,2,3,7,8-PeCDF	(0.896)	(0.437)	80.7	112	80.6
2,3,4,7,8-PeCDF	(1.01)	(0.476)	94.4	154	105
1,2,3,4,7,8-HxCDF	(0.806)	(0.526)	50.4	69.1	53.9
1,2,3,6,7,8-HxCDF	(0.728)	(0.502)	50.3	72.3	54.8
2,3,4,6,7,8-HxCDF	(0.76)	0.848	40.1	56.9	45.3
1,2,3,7,8,9-HxCDF	(1.06)	(0.729)	(1.31)	(1.23)	(1.35)
1,2,3,4,6,7,8-HpCDF	(0.816)	0.88	52.9	70.1	58.2
1,2,3,4,7,8,9-HpCDF	(1.54)	(0.704)	[4.7]	5.4	5.86
OCDF	(4.18)	(1.98)	7.97	7.48	9.73
ITEF TEQ (ND=0; EMPC=0)	0.0227	0.326	110	170	117
ITEF TEQ (ND=0; EMPC=EMPC)	0.189	0.326	110	170	117
ITEF TEQ (ND=DL/2; EMPC=0)	1.76	1.26	110	170	117
ITEF TEQ (ND=DL/2; EMPC=EMPC)	1.86	1.26	110	170	117
ITEF TEQ (ND=DL; EMPC=EMPC)	3.53	2.19	110	170	117
Checkcode Lab ID	233-065-LRV MB1_12644_DF SDS	350-773-TJY A7224_12644_DF_001	234-658-BJW A7224_12644_DF_002	727-379-XJG A7224_12644_DF_003	836-235-CGF A7224_12644_DF_004

() = DL

[] = EMPC

A7224 - WHO-2005-TEQ

Project ID: Pogo

Sample Summary Part 1



Method 23

Analyte	Method Blank A7224_12644	I23-Blank	I23-1	I23-2	I23-3
	pg	pg	pg	pg	pg
2,3,7,8-TCDD	(1.32)	(0.732)	14.5	20.7	14.1
1,2,3,7,8-PeCDD	(1.56)	(0.945)	31	49	30.9
1,2,3,4,7,8-HxCDD	(1.17)	(0.733)	10.5	15.3	10.8
1,2,3,6,7,8-HxCDD	(1.24)	(0.795)	22.5	34.8	24.2
1,2,3,7,8,9-HxCDD	[1.57]	1.56	16.8	24.3	17.1
1,2,3,4,6,7,8-HpCDD	2.27	6.06	40.2	48.9	39.7
OCDD	[9.7]	15.3	33.5	29.6	26
2,3,7,8-TCDF	(0.91)	(0.644)	84.3	135	88
1,2,3,7,8-PeCDF	(0.896)	(0.437)	80.7	112	80.6
2,3,4,7,8-PeCDF	(1.01)	(0.476)	94.4	154	105
1,2,3,4,7,8-HxCDF	(0.806)	(0.526)	50.4	69.1	53.9
1,2,3,6,7,8-HxCDF	(0.728)	(0.502)	50.3	72.3	54.8
2,3,4,6,7,8-HxCDF	(0.76)	0.848	40.1	56.9	45.3
1,2,3,7,8,9-HxCDF	(1.06)	(0.729)	(1.31)	(1.23)	(1.35)
1,2,3,4,6,7,8-HpCDF	(0.816)	0.88	52.9	70.1	58.2
1,2,3,4,7,8,9-HpCDF	(1.54)	(0.704)	[4.7]	5.4	5.86
OCDF	(4.18)	(1.98)	7.97	7.48	9.73
WHO-2005 TEQ (ND=0; EMPC=0)	0.0227	0.315	105	161	109
WHO-2005 TEQ (ND=0; EMPC=EMPC)	0.182	0.315	105	161	109
WHO-2005 TEQ (ND=DL/2; EMPC=0)	2.04	1.43	105	161	110
WHO-2005 TEQ (ND=DL/2; EMPC=EMPC)	2.13	1.43	105	161	110
WHO-2005 TEQ (ND=DL; EMPC=EMPC)	4.09	2.55	105	161	110
Checkcode Lab ID	233-065-LRV MB1_12644_DF SDS	350-773-TJY A7224_12644_DF_001	234-658-BJW A7224_12644_DF_002	727-379-XJG A7224_12644_DF_003	836-235-CGF A7224_12644_DF_004

() = DL

[] = EMPC

A7224 - Totals

Project ID: Pogo

Sample Summary Part 2



Method 23

Analyte	Method Blank A7224_12644	I23-Blank	I23-1	I23-2	I23-3
	pg	pg	pg	pg	pg
Totals					
TCDDs	0	8.59	688	959	673
PeCDDs	0	0	709	1100	720
HxCDDs	0	3.74	341	519	349
HpCDDs	5.22	6.06	96.9	120	95.2
OCDD	0	15.3	33.5	29.6	26
TCDFs	0	8.16	2560	3670	2550
PeCDFs	0	0	1410	1960	1380
HxCDFs	0	0.848	495	683	521
HpCDFs	0	0.88	77.7	104	88.8
OCDF	0	0	7.97	7.48	9.73
Total PCDD/Fs (ND=0; EMPC=0)	5.22	43.6	6410	9150	6410
Total PCDD/Fs (ND=0; EMPC=EMPC)	23.4	50	6420	9150	6420
Total PCDD/Fs (2378-X ND=DL; EMPC=EMPC)	41.4	59.2	6420	9160	6420
Total 2378s (ND=0; EMPC=0)	2.27	24.6	630	905	665
Total 2378s (ND=0.5; EMPC=0)	14.2	29.2	631	905	665
Total 2378s (ND=1; EMPC=0)	26.1	33.8	632	906	666
Total 2378s (ND=0; EMPC=1)	13.5	24.6	635	905	665
Total 2378s (ND=0.5; EMPC=1)	22.5	29.2	635	905	665
Total 2378s (ND=1; EMPC=1)	31.5	33.8	636	906	666
Checkcode	233-065-LRV	350-773-TJY	234-658-BJW	727-379-XJG	836-235-CGF
Lab ID	MB1_12644_DF_SDS	A7224_12644_DF_001	A7224_12644_DF_002	A7224_12644_DF_003	A7224_12644_DF_004

() = DL

[] = EMPC

A7224 - Others

Project ID: Pogo

Sample Summary Part 3



Method 23

Analyte	Method Blank A7224_12644	I23-Blank	I23-1	I23-2	I23-3
Other PCDD/Fs (ND=0, EMPC=0)					
Other TCDD	0	8.59	674	939	659
Other PeCDD	0	0	678	1050	689
Other HxCDD	0	2.18	292	445	297
Other HpCDD	2.94	0	56.7	71.3	55.5
Other TCDF	0	8.16	2470	3530	2460
Other PeCDF	0	0	1230	1700	1200
Other HxCDF	0	0	355	484	367
Other HpCDF	0	0	24.7	28.6	24.8
Other PCDD/Fs (ND=0, EMPC=EMPC)					
Other TCDD	6.89	8.59	674	939	667
Other PeCDD	0	0	678	1050	689
Other HxCDD	0	2.18	292	445	297
Other HpCDD	2.94	4.48	56.7	71.3	55.5
Other TCDF	0	9.64	2470	3530	2460
Other PeCDF	0	0.501	1230	1700	1200
Other HxCDF	0	0	361	484	367
Other HpCDF	0	0	24.7	28.6	24.8
Checkcode Lab ID	233-065-LRV MB1_12644_DF SDS	350-773-TJY A7224_12644_DF_001	234-658-BJW A7224_12644_DF_002	727-379-XJG A7224_12644_DF_003	836-235-CGF A7224_12644_DF_004

() = DL

[] = EMPC

A7224 - DLs

Project ID: Pogo

Sample Summary Part 5 (DLs)

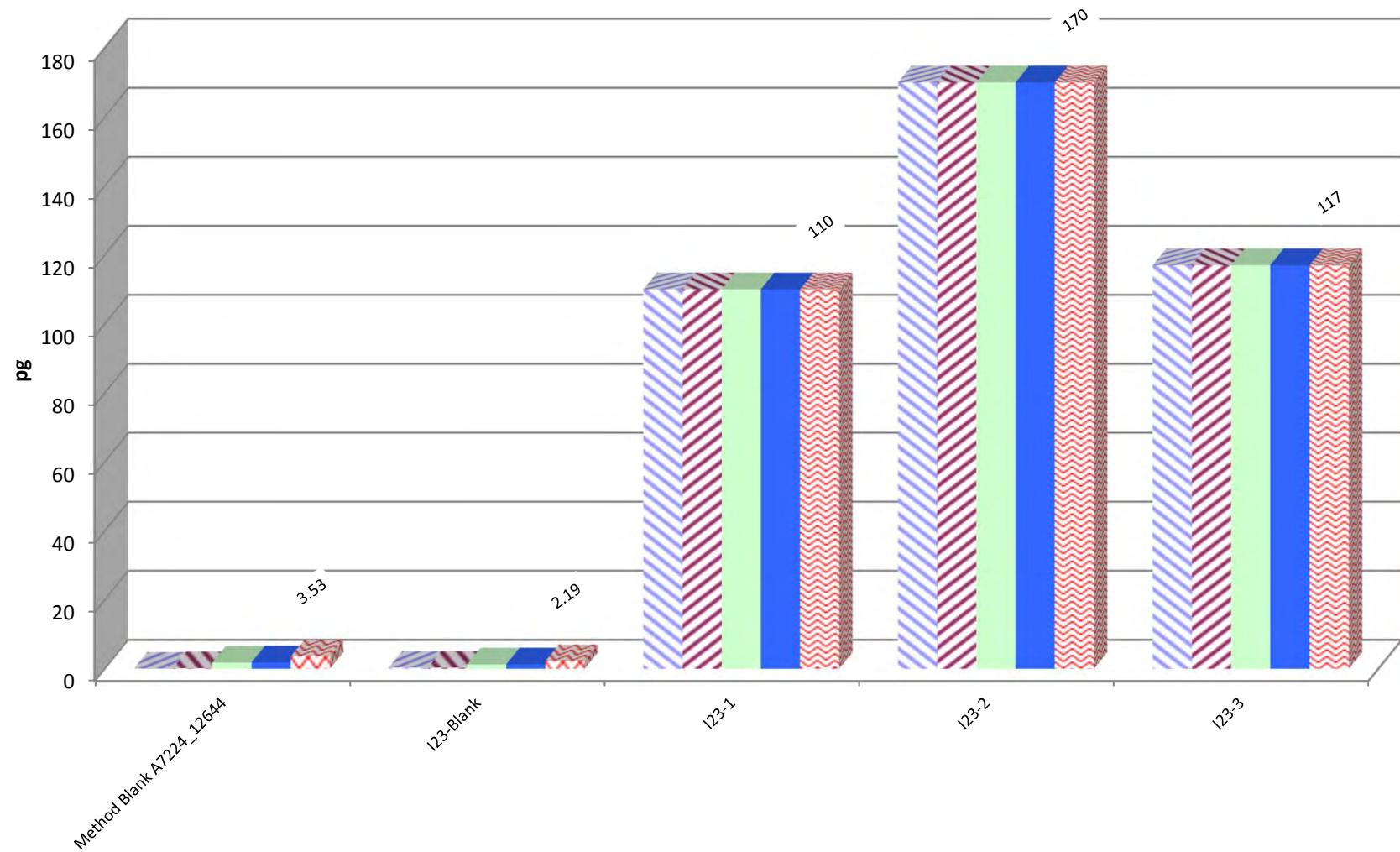


Method 23

Analyte	Method Blank A7224_12644	I23-Blank	I23-1	I23-2	I23-3
	pg	pg	pg	pg	pg
2,3,7,8-TCDD	1.32	0.732	0.75	0.851	1.69
1,2,3,7,8-PeCDD	1.56	0.945	1.4	1.18	2.25
1,2,3,4,7,8-HxCDD	1.17	0.733	1.05	0.937	1.38
1,2,3,6,7,8-HxCDD	1.24	0.795	1.12	1.01	1.47
1,2,3,7,8,9-HxCDD	1.32	0.799	1.18	1.04	1.56
1,2,3,4,6,7,8-HpCDD	1.73	1	1.29	0.907	1.81
OCDD	4.52	2.59	2.83	2.19	4.32
2,3,7,8-TCDF	0.91	0.644	0.863	0.588	1.24
1,2,3,7,8-PeCDF	0.896	0.437	1.33	2.02	2.44
2,3,4,7,8-PeCDF	1.01	0.476	1.38	2.12	2.45
1,2,3,4,7,8-HxCDF	0.806	0.526	0.953	0.936	1.05
1,2,3,6,7,8-HxCDF	0.728	0.502	0.841	0.896	0.972
2,3,4,6,7,8-HxCDF	0.76	0.494	0.95	0.878	1.04
1,2,3,7,8,9-HxCDF	1.06	0.729	1.31	1.23	1.35
1,2,3,4,6,7,8-HpCDF	0.816	0.395	0.518	0.457	0.889
1,2,3,4,7,8,9-HpCDF	1.54	0.704	0.951	0.735	1.66
OCDF	4.18	1.98	2.51	1.75	4.79
Total TCDD	1.32	0.732	0.75	0.851	1.69
Total PeCDD	1.56	0.945	1.4	1.18	2.25
Total HxCDD	1.24	0.773	1.11	0.99	1.46
Total HpCDD	1.73	1	1.29	0.907	1.81
Total TCDF	0.91	0.644	0.863	0.588	1.24
Total PeCDF	0.95	0.455	1.35	2.07	2.44
Total HxCDF	0.828	0.554	0.997	0.971	1.09
Total HpCDF	1.12	0.528	0.696	0.58	1.22
Checkcode Lab ID	233-065-LRV MB1_12644_DF_SDS	350-773-TJY A7224_12644_DF_001	234-658-BJW A7224_12644_DF_002	727-379-XJG A7224_12644_DF_003	836-235-CGF A7224_12644_DF_004

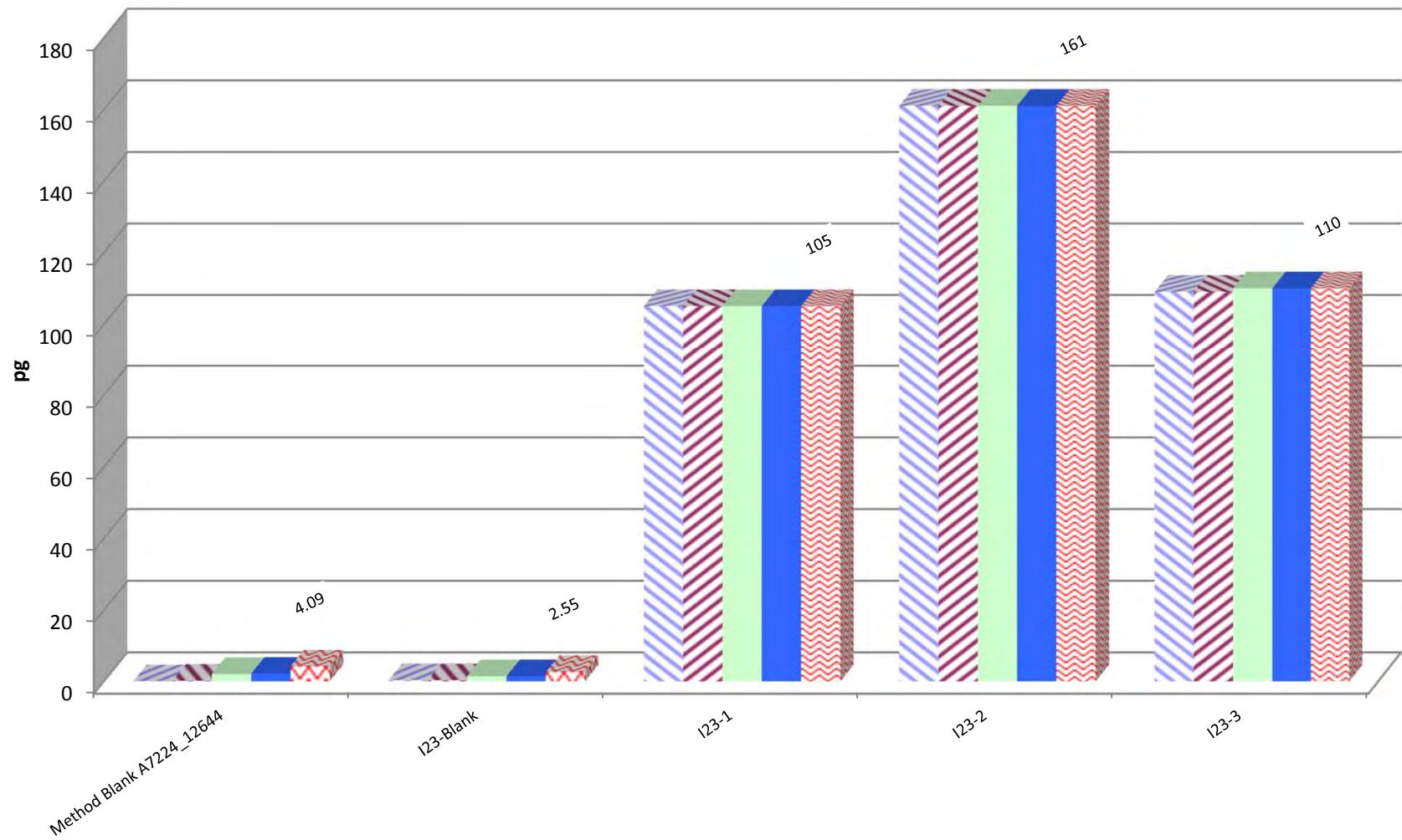
ITEF-TEQ
Project ID: Pogo
A7224

- ✓ ND=0; EMPC=0
- ✗ ND=0; EMPC=EMPC
- ND=DL/2; EMPC=0
- ND=DL/2; EMPC=EMPC
- ✗ ND=DL; EMPC=EMPC



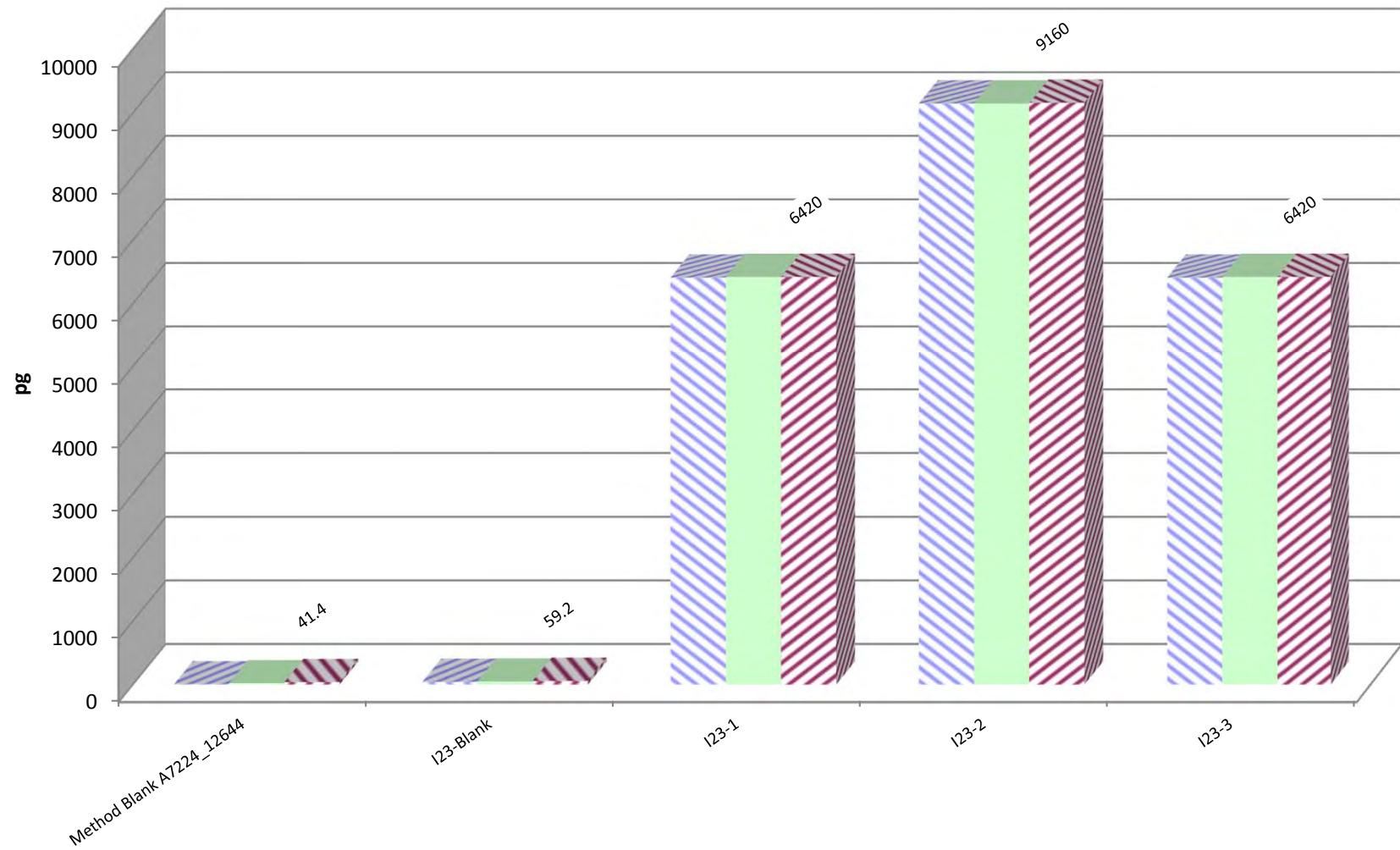
WHO-2005-TEQ
Project ID: Pogo
A7224

- ▢ ND=0; EMPC=0
- ▨ ND=0; EMPC=EMPC
- ▢ ND=DL/2; EMPC=0
- ▢ ND=DL/2; EMPC=EMPC
- ▨ ND=DL; EMPC=EMPC



Totals
Project ID: Pogo
A7224

- Total PCDD/Fs (ND=0; EMPC=0)
- Total PCDD/Fs (ND=0; EMPC=EMPC)
- Total PCDD/Fs (2378-X ND=DL; EMPC=EMPC)

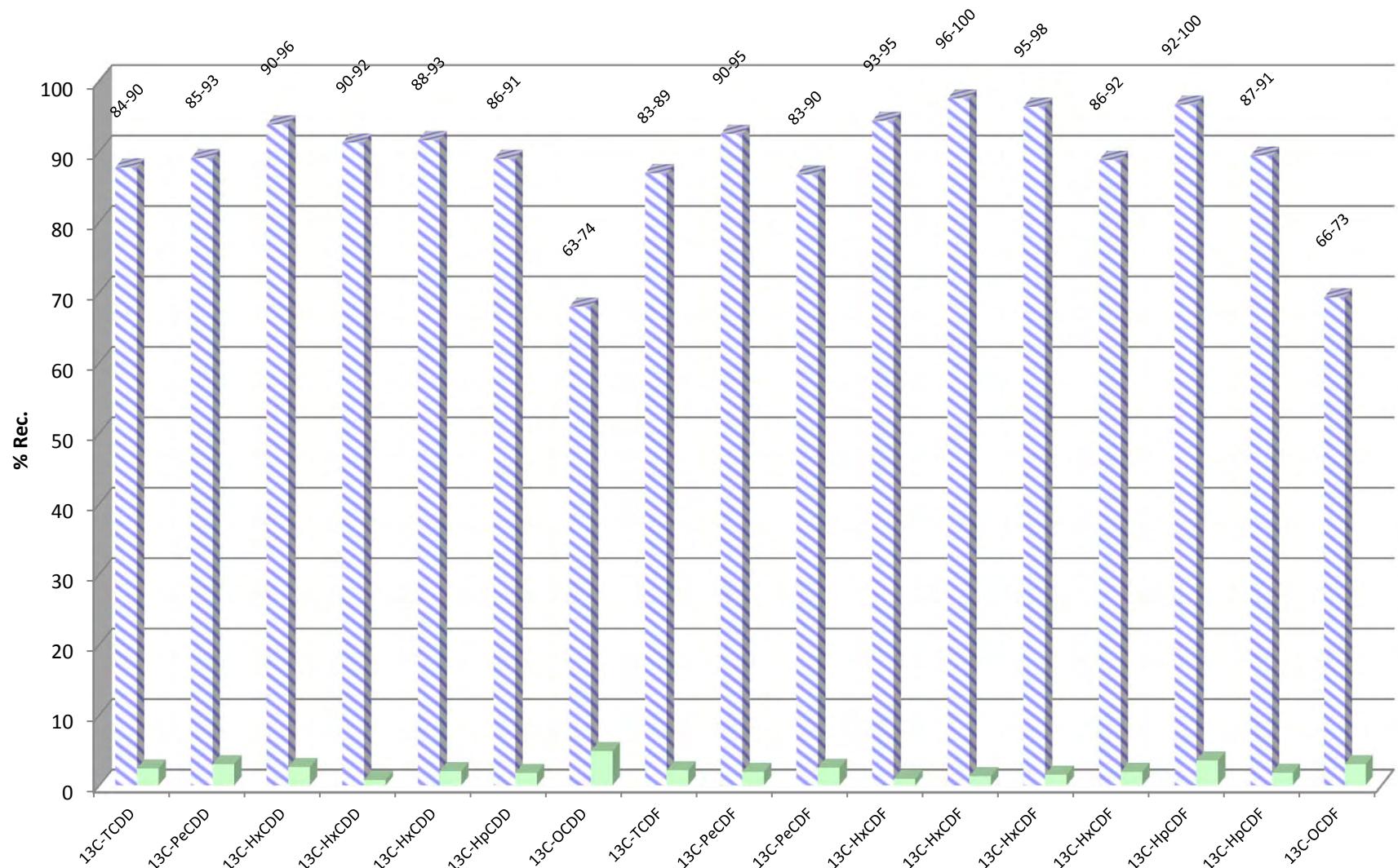


Mean Recoveries of Extraction Standards (N=5)

Project ID: Pogo

A7224

Mean Std. Dev.



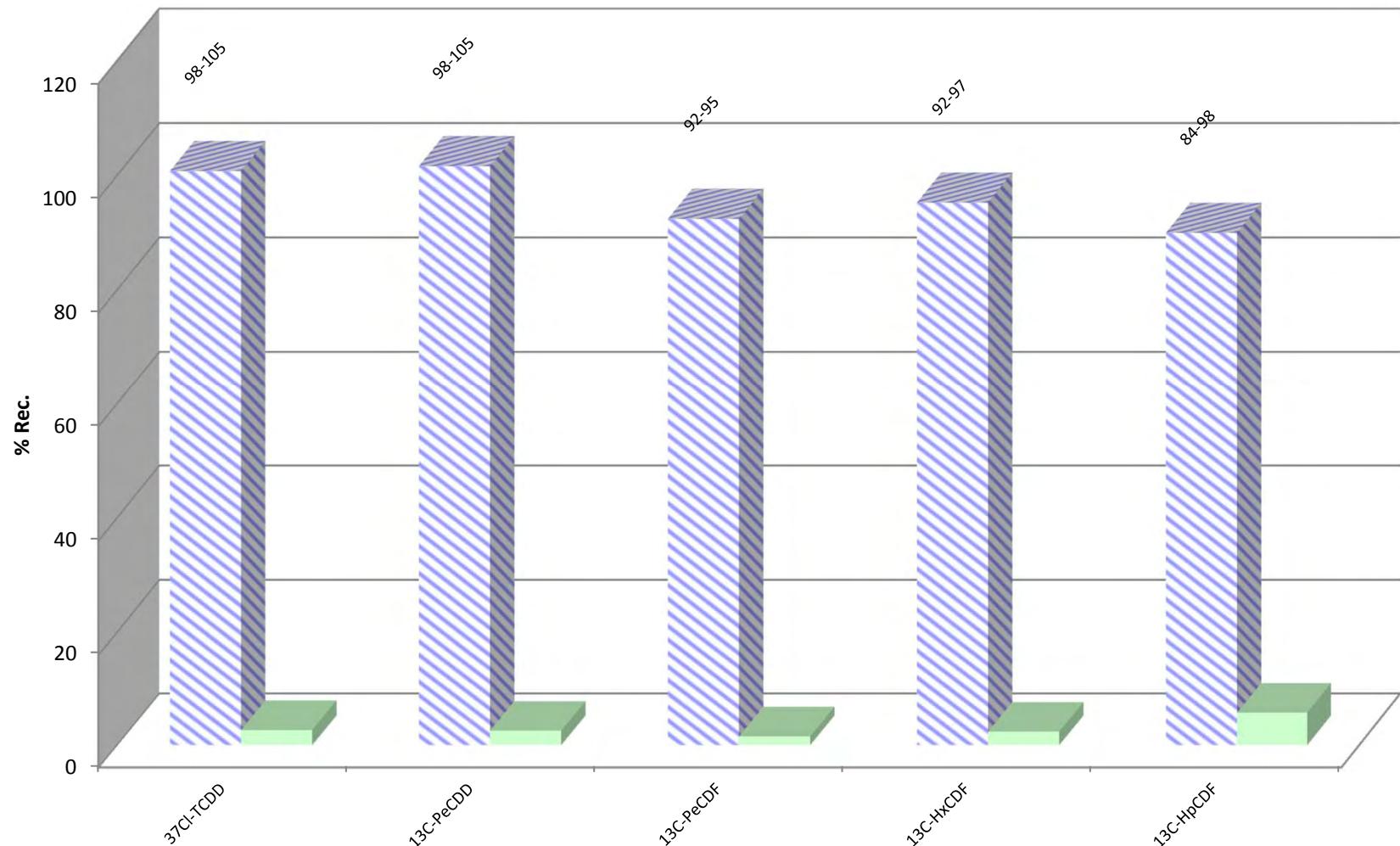
Method Specification Limits: Tetra-Hexa ES: 40-130%, Hepta-Octa ES: 25-130% (F = fail)

Mean Recoveries of Sampling Standards (N=5)

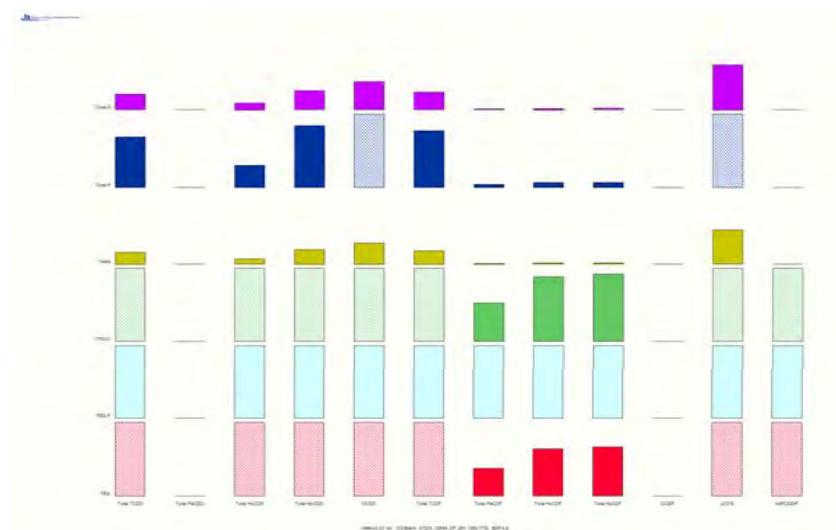
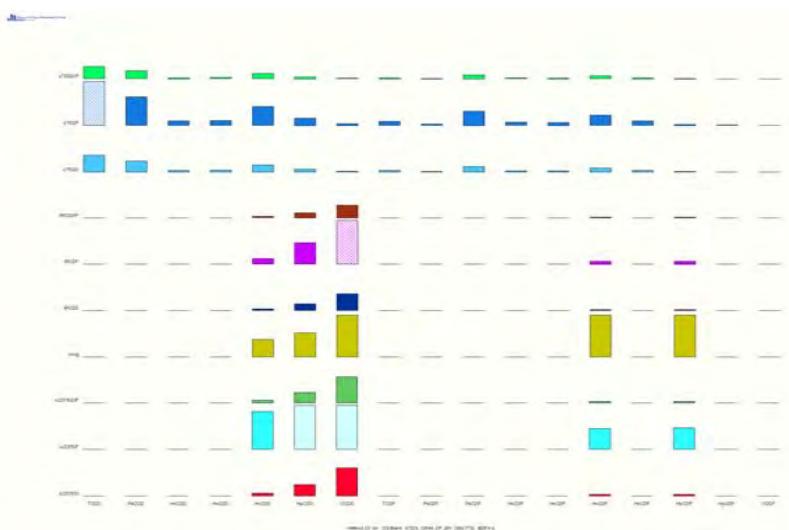
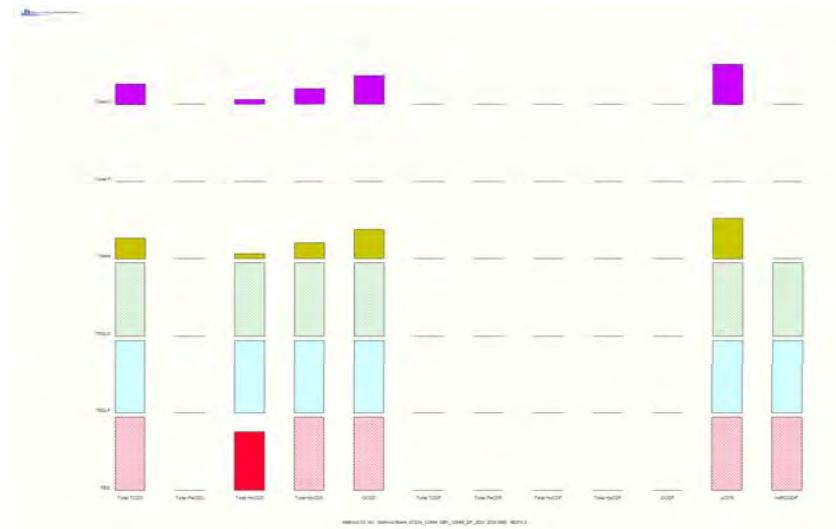
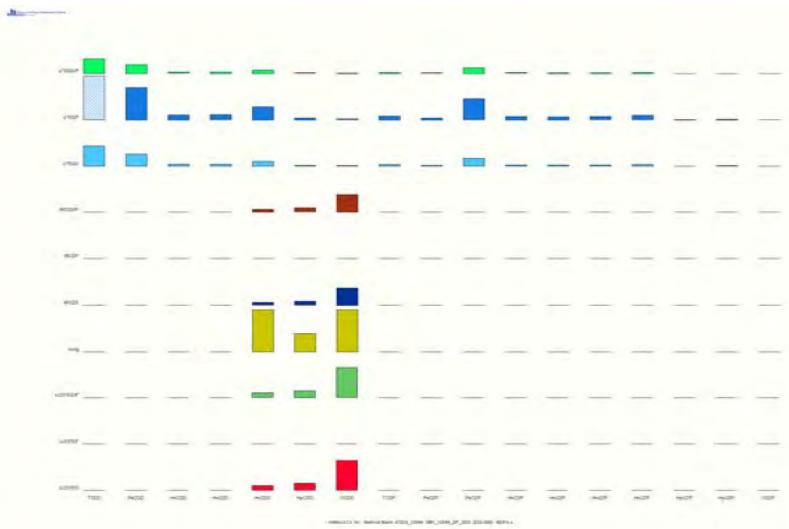
Project ID: Pogo

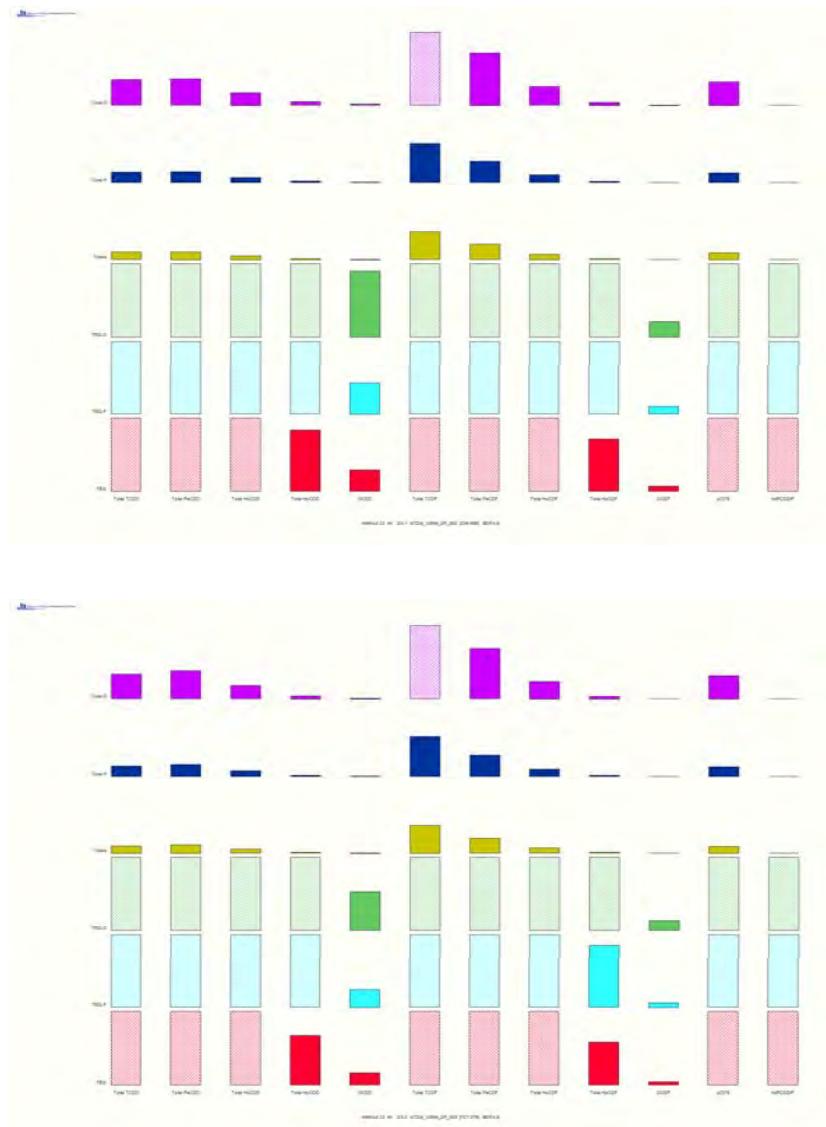
A7224

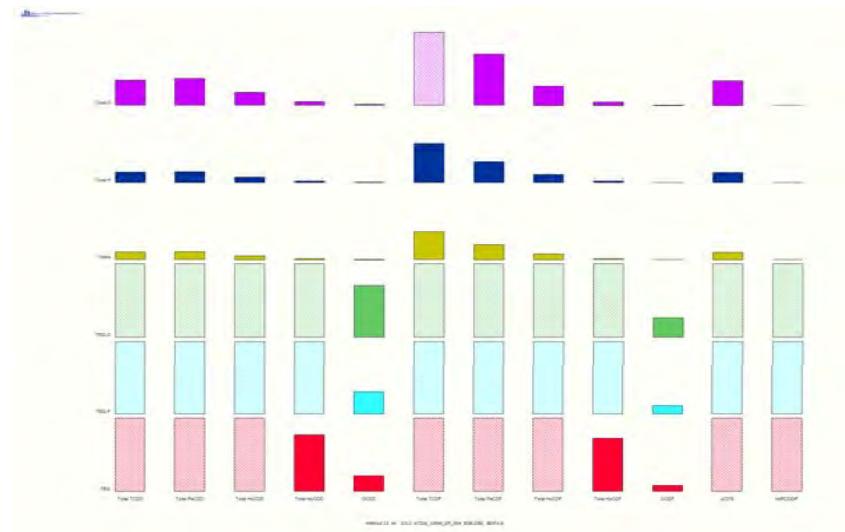
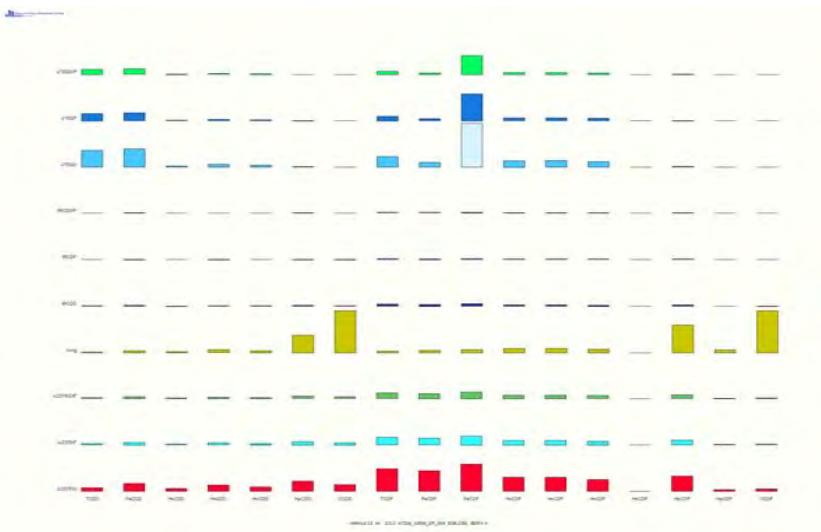
Mean Std. Dev.



Method Specification Limits: Tetra-Octa SS: 70-130% (F = fail)







Sample ID: I23-Blank

Method 23

Client Data		Sample Data		Laboratory Data			
Name:	SLR International Corp.	Matrix:	Air	Lab Project ID:	A7224	Date Received:	13-Oct-2014
Project ID:	Pogo	Weight/Volume:	1	Lab Sample ID	A7224_12644_DF_001	Date Extracted:	14-Oct-2014
Date Collected:	09-Oct-2014	Split:	2	QC Batch No:	12644	Date Analyzed:	18-Oct-2014
				Dilution:	-	Time Analyzed:	10:55:29
Analyte	Conc. (pg)	DL (pg)	EMPC (pg)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	ND	0.732			ES 2378-TCDD	89.6	
12378-PeCDD	ND	0.945			ES 12378-PeCDD	93.2	
123478-HxCDD	ND	0.733			ES 123478-HxCDD	93.4	
123678-HxCDD	ND	0.795			ES 123678-HxCDD	91.6	
123789-HxCDD	1.56			J B	ES 123789-HxCDD	91.7	
1234678-HpCDD	6.06			J B	ES 1234678-HpCDD	90.6	
OCDD	15.3			J B	ES OCDD	71	
2378-TCDF	ND	0.644			ES 2378-TCDF	88.1	
12378-PeCDF	ND	0.437			ES 12378-PeCDF	94.7	
23478-PeCDF	ND	0.476			ES 23478-PeCDF	87.1	
123478-HxCDF	ND	0.526			ES 123478-HxCDF	95	
123678-HxCDF	ND	0.502			ES 123678-HxCDF	98	
234678-HxCDF	0.848			J	ES 234678-HxCDF	97.6	
123789-HxCDF	ND	0.729			ES 123789-HxCDF	88.5	
1234678-HpCDF	0.88			J	ES 1234678-HpCDF	96.7	
1234789-HpCDF	ND	0.704			ES 1234789-HpCDF	91.2	
OCDF	ND	1.98			ES OCDF	71.6	
Totals					Standard	SS/AS Recoveries	
Total TCDD	8.59		8.59		SS 37Cl-2378-TCDD	99.3	
Total PeCDD	ND	0.945	ND		SS 12346-PeCDF	100	
Total HxCDD	3.74		3.74		SS 123469-HxCDF	97	
Total HpCDF	6.06		10.5		SS 1234689-HpCDF	91.9	
Total TCDF	8.16		9.64		AS 1368-TCDD	90.2	
Total PeCDF	ND		0.501		AS 1368-TCDF	90.2	
Total HxCDF	0.848		0.848				
Total HpCDF	0.88		0.88				
Total PCDD/Fs	43.6		50				
ITEF TEQs							
TEQ: ND=0	0.326		0.326		5500 Business Drive Wilmington, NC 28405, USA www.us.sgs.com		
TEQ: ND=DL/2	1.26	1.01	1.26				
TEQ: ND=DL	2.19	2.01	2.19				



Sample ID: I23-1

Method 23

Client Data		Sample Data		Laboratory Data				
Name:	SLR International Corp.	Matrix:	Air	Lab Project ID:	A7224	Date Received:	13-Oct-2014	
Project ID:	Pogo	Weight/Volume:	1	Lab Sample ID	A7224_12644_DF_002	Date Extracted:	14-Oct-2014	
Date Collected:	07-Oct-2014	Split:	2	QC Batch No:	12644	Date Analyzed:	18-Oct-2014	
				Dilution:	-	Time Analyzed:	11:48:46	
Analyte	Conc. (pg)	DL (pg)	EMPC (pg)	Qualifiers	Standard	ES Recoveries	Qualifiers	
2378-TCDD	14.5				ES 2378-TCDD	89.4		
12378-PeCDD	31			J	ES 12378-PeCDD	90.4		
123478-HxCDD	10.5			J	ES 123478-HxCDD	96.2		
123678-HxCDD	22.5			J	ES 123678-HxCDD	92.3		
123789-HxCDD	16.8			J	ES 123789-HxCDD	92.7		
1234678-HpCDD	40.2			J	ES 1234678-HpCDD	90.7		
OCDD	33.5			J B	ES OCDD	74.5		
2378-TCDF	84.3				ES 2378-TCDF	88.7		
12378-PeCDF	80.7				ES 12378-PeCDF	93.3		
23478-PeCDF	94.4				ES 23478-PeCDF	88.6		
123478-HxCDF	50.4				ES 123478-HxCDF	94.4		
123678-HxCDF	50.3				ES 123678-HxCDF	97.2		
234678-HxCDF	40.1			J	ES 234678-HxCDF	94.7		
123789-HxCDF	ND	1.31			ES 123789-HxCDF	86.3		
1234678-HpCDF	52.9				ES 1234678-HpCDF	100		
1234789-HpCDF	EMPC		4.7	J	ES 1234789-HpCDF	87.1		
OCDF	7.97			J	ES OCDF	73.1		
Totals					Standard	SS/AS Recoveries		
Total TCDD	688		688		SS 37Cl-2378-TCDD	97.8		
Total PeCDD	709		709		SS 12347-PeCDD	98.4		
Total HxCDD	341		341		SS 12346-PeCDF	91.6		
Total HpCDD	96.9		96.9		SS 123469-HxCDF	91.9		
					SS 1234689-HpCDF	85		
Total TCDF	2560		2560		AS 1368-TCDD	91.8		
Total PeCDF	1410		1410		AS 1368-TCDF	90.1		
Total HxCDF	495		501					
Total HpCDF	77.7		82.4					
Total PCDD/Fs	6410		6420					
ITEF TEQs								
TEQ: ND=0	110		110					
TEQ: ND=DL/2	110	1.53	110					
TEQ: ND=DL	110	3.07	110					



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Sample ID: I23-2

Method 23

Client Data		Sample Data		Laboratory Data				
Name:	SLR International Corp.	Matrix:	Air	Lab Project ID:	A7224	Date Received:	13-Oct-2014	
Project ID:	Pogo	Weight/Volume:	1	Lab Sample ID	A7224_12644_DF_003	Date Extracted:	14-Oct-2014	
Date Collected:	08-Oct-2014	Split:	2	QC Batch No:	12644	Date Analyzed:	18-Oct-2014	
				Dilution:	-	Time Analyzed:	12:42:02	
Analyte	Conc. (pg)	DL (pg)	EMPC (pg)	Qualifiers	Standard	ES Recoveries	Qualifiers	
2378-TCDD	20.7				ES 2378-TCDD	88.9		
12378-PeCDD	49			J	ES 12378-PeCDD	89.2		
123478-HxCDD	15.3			J	ES 123478-HxCDD	95.9		
123678-HxCDD	34.8			J	ES 123678-HxCDD	91.1		
123789-HxCDD	24.3			J	ES 123789-HxCDD	93.1		
1234678-HpCDD	48.9			J	ES 1234678-HpCDD	88.8		
OCDD	29.6			J B	ES OCDD	63.1		
2378-TCDF	135				ES 2378-TCDF	88.1		
12378-PeCDF	112				ES 12378-PeCDF	93.5		
23478-PeCDF	154				ES 23478-PeCDF	89.5		
123478-HxCDF	69.1				ES 123478-HxCDF	95.2		
123678-HxCDF	72.3				ES 123678-HxCDF	99.6		
234678-HxCDF	56.9				ES 234678-HxCDF	95.7		
123789-HxCDF	ND	1.23			ES 123789-HxCDF	88.9		
1234678-HpCDF	70.1				ES 1234678-HpCDF	91.5		
1234789-HpCDF	5.4			J	ES 1234789-HpCDF	90.7		
OCDF	7.48			J	ES OCDF	69		
Totals					Standard	SS/AS Recoveries		
Total TCDD	959		959		SS 37Cl-2378-TCDD	101		
Total PeCDD	1100		1100		SS 12347-PeCDD	103		
Total HxCDD	519		519		SS 12346-PeCDF	95.2		
Total HpCDD	120		120		SS 123469-HxCDF	97		
Total TCDF	3670		3670		SS 1234689-HpCDF	98.5		
Total PeCDF	1960		1960		AS 1368-TCDD	88.1		
Total HxCDF	683		683		AS 1368-TCDF	90.6		
Total HpCDF	104		104					
Total PCDD/Fs	9150		9150					
ITEF TEQs								
TEQ: ND=0	170		170		5500 Business Drive Wilmington, NC 28405, USA www.us.sgs.com			
TEQ: ND=DL/2	170	1.69	170					
TEQ: ND=DL	170	3.38	170					



Sample ID: I23-3

Method 23

Client Data		Sample Data		Laboratory Data			
Name:	SLR International Corp.	Matrix:	Air	Lab Project ID:	A7224	Date Received:	13-Oct-2014
Project ID:	Pogo	Weight/Volume:	1	Lab Sample ID	A7224_12644_DF_004	Date Extracted:	14-Oct-2014
Date Collected:	09-Oct-2014	Split:	2	QC Batch No:	12644	Date Analyzed:	18-Oct-2014
				Dilution:	-	Time Analyzed:	13:35:25
Analyte	Conc. (pg)	DL (pg)	EMPC (pg)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	14.1				ES 2378-TCDD	86.9	
12378-PeCDD	30.9			J	ES 12378-PeCDD	87.2	
123478-HxCDD	10.8			J	ES 123478-HxCDD	94	
123678-HxCDD	24.2			J	ES 123678-HxCDD	91.1	
123789-HxCDD	17.1			J	ES 123789-HxCDD	92.5	
1234678-HpCDD	39.7			J	ES 1234678-HpCDD	86.4	
OCDD	26			J B	ES OCDD	63.5	
2378-TCDF	88				ES 2378-TCDF	86.3	
12378-PeCDF	80.6				ES 12378-PeCDF	91	
23478-PeCDF	105				ES 23478-PeCDF	85	
123478-HxCDF	53.9				ES 123478-HxCDF	94.3	
123678-HxCDF	54.8				ES 123678-HxCDF	96.7	
234678-HxCDF	45.3			J	ES 234678-HxCDF	98.3	
123789-HxCDF	ND	1.35			ES 123789-HxCDF	91.7	
1234678-HpCDF	58.2				ES 1234678-HpCDF	95.2	
1234789-HpCDF	5.86			J	ES 1234789-HpCDF	90.2	
OCDF	9.73			J	ES OCDF	66.3	
Totals					Standard	SS/AS Recoveries	
Total TCDD	673		681		SS 37Cl-2378-TCDD	105	
Total PeCDD	720		720		SS 12346-PeCDF	91.7	
Total HxCDD	349		349		SS 123469-HxCDF	97	
Total HpCDD	95.2		95.2		SS 1234689-HpCDF	90.4	
Total TCDF	2550		2550		AS 1368-TCDD	89.2	
Total PeCDF	1380		1380		AS 1368-TCDF	88.1	
Total HxCDF	521		521				
Total HpCDF	88.8		88.8				
Total PCDD/Fs	6410		6420				
ITEF TEQs							
TEQ: ND=0	117		117		5500 Business Drive		
TEQ: ND=DL/2	117	2.61	117		Wilmington, NC 28405, USA		
TEQ: ND=DL	117	5.22	117		www.us.sgs.com		
					Tel: +1 910 794-1613; Toll-Free 866 846-8290		



Sample ID: Method Blank A7224_12644

Method 23

Client Data		Sample Data		Laboratory Data				
Name:	SLR International Corp.	Matrix:	Air	Lab Project ID:	A7224	Date Received:	n/a	
Project ID:	Pogo	Weight/Volume:	1	Lab Sample ID	MB1_12644_DF_SDS	Date Extracted:	14-Oct-2014	
Date Collected:	n/a	Split:	2	QC Batch No:	12644	Date Analyzed:	18-Oct-2014	
				Dilution:	-	Time Analyzed:	10:02:07	
Analyte	Conc. (pg)	DL (pg)	EMPC (pg)	Qualifiers	Standard	ES Recoveries	Qualifiers	
2378-TCDD	ND	1.32			ES 2378-TCDD	83.9		
12378-PeCDD	ND	1.56			ES 12378-PeCDD	85.3		
123478-HxCDD	ND	1.17			ES 123478-HxCDD	89.7		
123678-HxCDD	ND	1.24			ES 123678-HxCDD	90.2		
123789-HxCDD	EMPC		1.57	J	ES 123789-HxCDD	88.1		
1234678-HpCDD	2.27			J	ES 1234678-HpCDD	88.3		
OCDD	EMPC		9.7	J	ES OCDD	67.8		
2378-TCDF	ND	0.91			ES 2378-TCDF	83.4		
12378-PeCDF	ND	0.896			ES 12378-PeCDF	90		
23478-PeCDF	ND	1.01			ES 23478-PeCDF	83.4		
123478-HxCDF	ND	0.806			ES 123478-HxCDF	92.8		
123678-HxCDF	ND	0.728			ES 123678-HxCDF	96.2		
234678-HxCDF	ND	0.76			ES 234678-HxCDF	95.5		
123789-HxCDF	ND	1.06			ES 123789-HxCDF	88.6		
1234678-HpCDF	ND	0.816			ES 1234678-HpCDF	99.9		
1234789-HpCDF	ND	1.54			ES 1234789-HpCDF	87.9		
OCDF	ND	4.18			ES OCDF	66.5		
Totals					Standard	SS/AS Recoveries		
Total TCDD	ND		6.89		SS 37Cl-2378-TCDD	101		
Total PeCDD	ND	1.56	ND		SS 12346-PeCDF	102		
Total HxCDD	ND		1.57		SS 123469-HxCDF	91.5		
Total HpCDD	5.22		5.22		SS 1234689-HpCDF	93.6		
Total TCDF	ND	0.91	ND		AS 1368-TCDD	84.3		
Total PeCDF	ND	0.95	ND		AS 1368-TCDF	91.2		
Total HxCDF	ND	0.828	ND			92.9		
Total HpCDF	ND	1.12	ND					
Total PCDD/Fs	5.22		23.4					
ITEF TEQs								
TEQ: ND=0	0.0227		0.189					
TEQ: ND=DL/2	1.76	1.75	1.86					
TEQ: ND=DL	3.5	3.5	3.53					



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Sample Receipt Notification

**5500 Business Drive
Wilmington, NC 28405 USA
Tel: 910 794-1613
Toll Free: 866 846-8290
Fax: 910 794-3919**

Project Manager: Amy Boehm
Receipt Date & Time: 13-Oct-14 at 08:39
AP Project name: A7224
Requested TAT: 21 days
Projected due date: 3-Nov-14
Matrix: Air - M23
Phone#: 910-794-1613
Email Address: Amy.Boehm@sgs.com

Company Contact: *John Rosburg*
Company: *SLR International Corp.*
Project Name & Site: *Pogo*
Project PO#: *1037*
QAAP/Contract #: *N/A*
Requested Analysis: *Method 23*
Phone#: *970-494-0805*
Email Address: *jrosburg@slrconsulting.com*

Received Temps

Received by: Christina Newkirk

Logged in by: Christina Newkirk

QC'ed by: AK 13 Oct 14

All services are rendered in accordance with the applicable SGS General Conditions of Service accessible via:

http://www.sgs.com/terms_and_conditions.htm

Type & Quantity of Sampling Modules

Qty. XAD Traps: 7
 Resin Batch No.: 51716
 Qty. PUF: N/A
 PUF Batch No.: N/A
 Filter Size: 82.6 mm
 Qty. Filter: 9
 Filter Batch #: 04292014
 Qty. Petri Dishes: 7
 # of BCS3 & MB: 1

Client Specific Instructions

USE RENTAL TRAPS
 SLR PROJECT #118.00284.00002

Other Requirements

Rinse Jars: N/A
 # CarboPacs: N/A

Spike Profile

Vol. PCDD/F : 40 μ L
 Solution ID: 01172014 B Amount: 1.6-4 ng
 Vial ID: 14-44-1 Expiration: 4/30/15

Vol. HR_PAH: 80 μ L (40ng)

Solution ID: Amount: 0.5 ng/ μ L
 Vial ID: Expiration:

Vol.HR_PCB: 40 μ L (4ng)

Solution ID: Amount: 0.1 ng/ μ L
 Vial ID: Expiration:



Sampling Module Request Form

Trap Order #: **T2055**

Following sample recovery, please return this form with the field samples to:

5500 Business Dr.
 Wilmington, NC 28405
 Ph.: 910-794-1613
 Fax.: 910-794-3919

Please be aware of your trap batch # QC begins when we prep your traps. The Method Blanks and BCS₃ are prepared simultaneously with the trap and are properly stored until the trap batch returns for analysis.

We recommend keeping trap batches together and if a set of traps is to be split into multiple projects, please let us know so we can prepare extra Method Blanks/BCS₃

Spike By: M 7/8/14

Witness: IS 7-8-14

Client Information

Company: SLR International Corp.
 Contact: John Rosburg
 Email: jrosburg@slrconsulting.com
 Phone: 970-494-0805
 Project Name: AK Source Evaluation
 PO#: 1037
 Order Date: 3-Jul-14
 Arrival Date: 9-Jul-14
 Ship To: Sumitomo Metal Mining Pogo LLC
Attn. Sally McLeod
3204 International Street
Fairbanks, Alaska 99701
USA
jrosburg@slrconsulting.com
907-895-2879

All Projects are shipped Priority Overnight via FEDEX

Analyses

PCDD/F

Additional Information

AP Rental Traps Qty.: 7
 Air Bill #: 610930671493
 # Containers: 1
 Ship Date: 8-July-14

Trap Batch

T2,55

Initial & Date below for each trap

Spiking Traps

only fill out applicable table

Solution ID:	011720MB
Spike Volume :	40 -
TRAP ID	PCDD/Fs
BCS3	1S
MB-000	VS
001	VS
002	VS
003	1S
004	1S
005	1S
006	VS
007	VS

Solution ID:	
Spike Volume :	
TRAP ID	HRPCBs
BCS3	
MB-000	
001	
002	
003	
004	
005	
006	
007	

Solution ID:	
Spike Volume :	
TRAP ID	HRPAHs
BCS3	
MB-000	
001	
002	
003	
004	
005	
006	
007	

Solution ID:	
Spike Volume :	
TRAP ID	OTHER
BCS3	
MB-000	
001	
002	
003	
004	
005	
006	
007	

7-8-14



ANALYTICAL REPORT

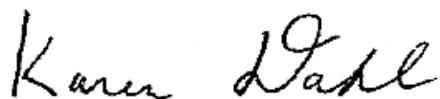
Job Number: 320-9897-1

Job Description: Pogo Mine 118.00284.00002

For:

SLR International Corp
1612 Specht Point Road, Suite 119
Fort Collins, CO 80525

Attention: Mr. John Rosburg



Approved for release.
Karen Dahl
Senior Project Manager
11/3/2014 2:09 PM

Karen Dahl, Senior Project Manager
880 Riverside Parkway, West Sacramento, CA, 95605
(916)374-4384
karen.dahl@testamericainc.com
11/03/2014



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Definitions/Glossary

Client: SLR International Corp
Project/Site: Pogo Mine

TestAmerica Job ID: 320-9897-1

Qualifiers

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
D	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Job Narrative
320-9897-1

Comments

No additional comments.

Receipt

The samples were received on 10/13/2014 8:50 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 18.0° C.

Except:

Sample I5-4 was received but it was not listed on the COC. This sample was analyzed for HCL. The container for sample I5-Blank was labeled with a collection date of 10-8-14. The collection date listed on the COC was used in the report.

Metals

Method(s) Hg Prep: The autoclave temperature probe was not working. The autoclave temperature was monitored at 120 degree Celsius for 15 minutes.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: SLR International Corp
Project/Site: Pogo Mine

TestAmerica Job ID: 320-9897-1

Client Sample ID: I29-1

Lab Sample ID: 320-9897-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cadmium	5.2		0.32	0.024	ug/Sample	1	29/6020		Total/NA
Lead	110	B	0.32	0.021	ug/Sample	1	29/6020		Total/NA
Hg	0.027	J	0.030	0.0074	ug/Sample	1	29/7470A		Total/NA
Hg	1.3		0.10	0.025	ug/Sample	1	29/7470A		Total/NA
Hg	0.064	J	0.10	0.025	ug/Sample	1	29/7470A		Total/NA

Client Sample ID: I29-2

Lab Sample ID: 320-9897-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cadmium	3.7		0.32	0.024	ug/Sample	1	29/6020		Total/NA
Lead	58	B	0.32	0.021	ug/Sample	1	29/6020		Total/NA
Hg	1.8		0.10	0.025	ug/Sample	1	29/7470A		Total/NA
Hg	0.10		0.10	0.025	ug/Sample	1	29/7470A		Total/NA

Client Sample ID: I29-3

Lab Sample ID: 320-9897-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cadmium	4.4		0.32	0.024	ug/Sample	1	29/6020		Total/NA
Lead	54	B	0.32	0.021	ug/Sample	1	29/6020		Total/NA
Hg	0.013	J	0.030	0.0074	ug/Sample	1	29/7470A		Total/NA
Hg	1.1		0.10	0.025	ug/Sample	1	29/7470A		Total/NA
Hg	0.037	J	0.10	0.025	ug/Sample	1	29/7470A		Total/NA

Client Sample ID: I29-BLANK

Lab Sample ID: 320-9897-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lead	0.26	J B	0.38	0.025	ug/Sample	1	29/6020		Total/NA

Client Sample ID: PEA1945

Lab Sample ID: 320-9897-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cadmium	77		0.15	0.011	ug/Sample	1	29/6020		Total/NA
Lead	100		0.15	0.0099	ug/Sample	1	29/6020		Total/NA

Client Sample ID: PEA1948

Lab Sample ID: 320-9897-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cadmium	81		0.15	0.011	ug/Sample	1	29/6020		Total/NA
Lead	180	B	0.15	0.0099	ug/Sample	1	29/6020		Total/NA

Client Sample ID: PEA1941

Lab Sample ID: 320-9897-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Hydrochloric Acid	120		5.1	2.6	mg/sample	10		0050/26A	Total/NA
Chloride	110		5.0	4.0	mg/L	10		0050/26A	Total/NA
Chloride	110		5.0	4.0	mg/L	10		0050/26A	Total/NA

Client Sample ID: I5-1

Lab Sample ID: 320-9897-8

This Detection Summary does not include radiochemical test results.

TestAmerica Sacramento

Detection Summary

Client: SLR International Corp
Project/Site: Pogo Mine

TestAmerica Job ID: 320-9897-1

Client Sample ID: I5-1 (Continued)

Lab Sample ID: 320-9897-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Hydrochloric Acid	0.58		0.31	0.16	mg/sample	1		0050/26A	Total/NA
Chloride	0.93		0.50	0.40	mg/L	1		0050/26A	Total/NA
Chloride	0.91		0.50	0.40	mg/L	1		0050/26A	Total/NA

Client Sample ID: I5-2

Lab Sample ID: 320-9897-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Hydrochloric Acid	0.77		0.32	0.16	mg/sample	1		0050/26A	Total/NA
Chloride	1.3		0.50	0.40	mg/L	1		0050/26A	Total/NA
Chloride	1.1		0.50	0.40	mg/L	1		0050/26A	Total/NA

Client Sample ID: I5-3

Lab Sample ID: 320-9897-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Hydrochloric Acid	1.0		0.34	0.17	mg/sample	1		0050/26A	Total/NA
Chloride	1.5		0.50	0.40	mg/L	1		0050/26A	Total/NA
Chloride	1.4		0.50	0.40	mg/L	1		0050/26A	Total/NA

Client Sample ID: I5-4

Lab Sample ID: 320-9897-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Hydrochloric Acid	0.44		0.34	0.17	mg/sample	1		0050/26A	Total/NA
Chloride	0.65		0.50	0.40	mg/L	1		0050/26A	Total/NA
Chloride	0.64		0.50	0.40	mg/L	1		0050/26A	Total/NA

Client Sample ID: I5 BLANK

Lab Sample ID: 320-9897-12

No Detections.

This Detection Summary does not include radiochemical test results.

TestAmerica Sacramento

Client Sample Results

Client: SLR International Corp
Project/Site: Pogo Mine

TestAmerica Job ID: 320-9897-1

Client Sample ID: I29-1

Lab Sample ID: 320-9897-1

Matrix: Air

Date Collected: 10/07/14 00:00

Date Received: 10/13/14 08:50

Sample Container: Air Train

Method: 29/6020 - Metals (ICPMS), Stationary Source

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	5.2		0.32	0.024	ug/Sample		10/22/14 09:00	10/24/14 01:05	1
Lead	110	B	0.32	0.021	ug/Sample		10/22/14 09:00	10/24/14 01:05	1

Method: 29/7470A - Mercury - Empty

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND		0.78	0.19	ug/Sample		10/17/14 09:34	10/17/14 12:20	1

Method: 29/7470A - Mercury - Front Half

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	0.027	J	0.030	0.0074	ug/Sample		10/27/14 09:24	10/27/14 13:42	1

Method: 29/7470A - Mercury - HCl

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	1.3		0.10	0.025	ug/Sample		10/27/14 10:32	10/27/14 13:54	1

Method: 29/7470A - Mercury - Nitric/Peroxide

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND		1.5	0.36	ug/Sample		10/17/14 09:34	10/17/14 12:08	1

Method: 29/7470A - Mercury - Permanganate

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	0.064	J	0.10	0.025	ug/Sample		10/17/14 09:34	10/17/14 11:56	1

Client Sample ID: I29-2

Lab Sample ID: 320-9897-2

Matrix: Air

Date Collected: 10/08/14 00:00

Date Received: 10/13/14 08:50

Sample Container: Air Train

Method: 29/6020 - Metals (ICPMS), Stationary Source

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	3.7		0.32	0.024	ug/Sample		10/22/14 09:00	10/24/14 01:30	1
Lead	58	B	0.32	0.021	ug/Sample		10/22/14 09:00	10/24/14 01:30	1

Method: 29/7470A - Mercury - Empty

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND		0.66	0.16	ug/Sample		10/17/14 09:34	10/17/14 12:22	1

Method: 29/7470A - Mercury - Front Half

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND		0.030	0.0074	ug/Sample		10/27/14 09:24	10/27/14 13:44	1

Method: 29/7470A - Mercury - HCl

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	1.8		0.10	0.025	ug/Sample		10/27/14 10:32	10/27/14 13:56	1

Method: 29/7470A - Mercury - Nitric/Peroxide

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND		1.6	0.39	ug/Sample		10/17/14 09:34	10/17/14 12:14	1

Client Sample Results

Client: SLR International Corp
Project/Site: Pogo Mine

TestAmerica Job ID: 320-9897-1

Client Sample ID: I29-2

Date Collected: 10/08/14 00:00
Date Received: 10/13/14 08:50
Sample Container: Air Train

Lab Sample ID: 320-9897-2

Matrix: Air

Method: 29/7470A - Mercury - Permanganate

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	0.10		0.10	0.025	ug/Sample	D	10/17/14 09:34	10/17/14 11:58	1

Client Sample ID: I29-3

Date Collected: 10/08/14 00:00
Date Received: 10/13/14 08:50
Sample Container: Air Train

Lab Sample ID: 320-9897-3

Matrix: Air

Method: 29/6020 - Metals (ICPMS), Stationary Source

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	4.4		0.32	0.024	ug/Sample	D	10/22/14 09:00	10/24/14 01:34	1
Lead	54 B		0.32	0.021	ug/Sample		10/22/14 09:00	10/24/14 01:34	1

Method: 29/7470A - Mercury - Empty

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND		0.82	0.20	ug/Sample	D	10/17/14 09:34	10/17/14 12:27	1

Method: 29/7470A - Mercury - Front Half

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	0.013 J		0.030	0.0074	ug/Sample	D	10/27/14 09:24	10/27/14 13:46	1

Method: 29/7470A - Mercury - HCl

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	1.1		0.10	0.025	ug/Sample	D	10/27/14 10:32	10/27/14 13:58	1

Method: 29/7470A - Mercury - Nitric/Peroxide

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND		1.5	0.36	ug/Sample	D	10/17/14 09:34	10/17/14 12:16	1

Method: 29/7470A - Mercury - Permanganate

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	0.037 J		0.10	0.025	ug/Sample	D	10/17/14 09:34	10/17/14 12:04	1

Client Sample ID: I29-BLANK

Date Collected: 10/08/14 00:00
Date Received: 10/13/14 08:50
Sample Container: Air Train

Lab Sample ID: 320-9897-4

Matrix: Air

Method: 29/6020 - Metals (ICPMS), Stationary Source

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		0.38	0.028	ug/Sample	D	10/22/14 09:00	10/24/14 01:37	1
Lead	0.26 J B		0.38	0.025	ug/Sample		10/22/14 09:00	10/24/14 01:37	1

Method: 29/7470A - Mercury - Empty

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND		0.20	0.049	ug/Sample	D	10/17/14 09:34	10/17/14 12:29	1

Method: 29/7470A - Mercury - Front Half

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND		0.030	0.0074	ug/Sample	D	10/27/14 09:24	10/27/14 13:52	1

Client Sample Results

Client: SLR International Corp
Project/Site: Pogo Mine

TestAmerica Job ID: 320-9897-1

Client Sample ID: I29-BLANK

Lab Sample ID: 320-9897-4

Matrix: Air

Date Collected: 10/08/14 00:00

Date Received: 10/13/14 08:50

Sample Container: Air Train

Method: 29/7470A - Mercury - HCl

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND		0.10	0.025	ug/Sample		10/27/14 10:32	10/27/14 14:00	1

Method: 29/7470A - Mercury - Nitric/Peroxide

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND		0.60	0.15	ug/Sample		10/17/14 09:34	10/17/14 12:18	1

Method: 29/7470A - Mercury - Permanganate

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND		0.080	0.020	ug/Sample		10/17/14 09:34	10/17/14 12:06	1

Client Sample ID: PEA1945

Lab Sample ID: 320-9897-5

Matrix: Air

Date Collected: 10/08/14 00:00

Date Received: 10/13/14 08:50

Sample Container: Amber Glass 125mL - unpreserved

Method: 29/6020 - Metals (ICPMS), Stationary Source

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	77		0.15	0.011	ug/Sample		10/22/14 09:00	10/24/14 02:03	1
Lead	100		0.15	0.0099	ug/Sample		10/22/14 09:00	10/24/14 02:03	1

Client Sample ID: PEA1948

Lab Sample ID: 320-9897-6

Matrix: Air

Date Collected: 10/08/14 00:00

Date Received: 10/13/14 08:50

Sample Container: Plastic 125mL - unpreserved

Method: 29/6020 - Metals (ICPMS), Stationary Source

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	81		0.15	0.011	ug/Sample		10/22/14 12:00	10/24/14 02:36	1
Lead	180 B		0.15	0.0099	ug/Sample		10/22/14 12:00	10/24/14 02:36	1

Client Sample ID: PEA1941

Lab Sample ID: 320-9897-7

Matrix: Air

Date Collected: 10/08/14 00:00

Date Received: 10/13/14 08:50

Sample Container: Air Train

Method: 0050/26A - HCl

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hydrochloric Acid	120		5.1	2.6	mg/sample			10/27/14 16:08	10

Method: 0050/26A - Hydrogen Halide and Halogen Emissions/Stationary Sources (Mod)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	110		5.0	4.0	mg/L			10/27/14 16:08	10
Chloride	110		5.0	4.0	mg/L			10/27/14 16:23	10

Client Sample Results

Client: SLR International Corp
Project/Site: Pogo Mine

TestAmerica Job ID: 320-9897-1

Client Sample ID: I5-1

Date Collected: 10/07/14 00:00
Date Received: 10/13/14 08:50
Sample Container: Air Train

Lab Sample ID: 320-9897-8

Matrix: Air

Method: 0050/26A - HCl

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hydrochloric Acid	0.58		0.31	0.16	mg/sample			10/27/14 16:37	1

Method: 0050/26A - Hydrogen Halide and Halogen Emissions/Stationary Sources (Mod)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.93		0.50	0.40	mg/L			10/27/14 16:37	1
Chloride	0.91		0.50	0.40	mg/L			10/27/14 16:52	1

Client Sample ID: I5-2

Date Collected: 10/08/14 00:00
Date Received: 10/13/14 08:50
Sample Container: Air Train

Lab Sample ID: 320-9897-9

Matrix: Air

Method: 0050/26A - HCl

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hydrochloric Acid	0.77		0.32	0.16	mg/sample			10/27/14 17:06	1

Method: 0050/26A - Hydrogen Halide and Halogen Emissions/Stationary Sources (Mod)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1.3		0.50	0.40	mg/L			10/27/14 17:06	1
Chloride	1.1		0.50	0.40	mg/L			10/27/14 17:21	1

Client Sample ID: I5-3

Date Collected: 10/08/14 00:00
Date Received: 10/13/14 08:50
Sample Container: Air Train

Lab Sample ID: 320-9897-10

Matrix: Air

Method: 0050/26A - HCl

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hydrochloric Acid	1.0		0.34	0.17	mg/sample			10/27/14 18:19	1

Method: 0050/26A - Hydrogen Halide and Halogen Emissions/Stationary Sources (Mod)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1.5		0.50	0.40	mg/L			10/27/14 18:19	1
Chloride	1.4		0.50	0.40	mg/L			10/27/14 18:33	1

Client Sample ID: I5-4

Date Collected: 10/09/14 00:00
Date Received: 10/13/14 08:50
Sample Container: Air Train

Lab Sample ID: 320-9897-11

Matrix: Air

Method: 0050/26A - HCl

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hydrochloric Acid	0.44		0.34	0.17	mg/sample			10/27/14 18:48	1

Method: 0050/26A - Hydrogen Halide and Halogen Emissions/Stationary Sources (Mod)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.65		0.50	0.40	mg/L			10/27/14 18:48	1
Chloride	0.64		0.50	0.40	mg/L			10/27/14 19:02	1

Client Sample Results

Client: SLR International Corp
Project/Site: Pogo Mine

TestAmerica Job ID: 320-9897-1

Client Sample ID: I5 BLANK

Date Collected: 10/09/14 00:00

Lab Sample ID: 320-9897-12

Matrix: Air

Date Received: 10/13/14 08:50

Sample Container: Amber Glass 250ml - unpreserved

Method: 0050/26A - HCl

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hydrochloric Acid	ND		0.10	0.051	mg/sample	-		10/27/14 19:46	1

Method: 0050/26A - Hydrogen Halide and Halogen Emissions/Stationary Sources (Mod)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		0.50	0.40	mg/L	-		10/27/14 19:46	1
Chloride	ND		0.50	0.40	mg/L	-		10/27/14 20:00	1

Default Detection Limits

Client: SLR International Corp
Project/Site: Pogo Mine

TestAmerica Job ID: 320-9897-1

Method: 0050/26A - HCl

Analyte	RL	MDL	Units	Method
Hydrochloric Acid	0.51	0.26	mg/sample	0050/26A

Method: 0050/26A - Hydrogen Halide and Halogen Emissions/Stationary Sources (Mod)

Analyte	RL	MDL	Units	Method
Chloride	0.50	0.40	mg/L	0050/26A

Method: 29/6020 - Metals (ICPMS), Stationary Source

Analyte	RL	MDL	Units	Method
Cadmium	0.10	0.0074	ug/Sample	29/6020
Cadmium	0.15	0.011	ug/Sample	29/6020
Lead	0.10	0.0066	ug/Sample	29/6020
Lead	0.15	0.0099	ug/Sample	29/6020

Method: 29/7470A - Mercury - Empty

Analyte	RL	MDL	Units	Method
Hg	0.20	0.049	ug/Sample	29/7470A

Method: 29/7470A - Mercury - Front Half

Analyte	RL	MDL	Units	Method
Hg	0.20	0.049	ug/Sample	29/7470A

Method: 29/7470A - Mercury - HCl

Analyte	RL	MDL	Units	Method
Hg	0.20	0.049	ug/Sample	29/7470A

Method: 29/7470A - Mercury - Nitric/Peroxide

Analyte	RL	MDL	Units	Method
Hg	0.20	0.049	ug/Sample	29/7470A

Method: 29/7470A - Mercury - Permanganate

Analyte	RL	MDL	Units	Method
Hg	0.20	0.049	ug/Sample	29/7470A

QC Sample Results

Client: SLR International Corp
Project/Site: Pogo Mine

TestAmerica Job ID: 320-9897-1

Method: 0050/26A - HCI

Lab Sample ID: MB 320-56555/1-A

Client Sample ID: Method Blank

Matrix: Air

Prep Type: Total/NA

Analysis Batch: 56562

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hydrochloric Acid	ND		0.51	0.26	mg/sample	-		10/27/14 15:10	1

Lab Sample ID: LCS 320-56555/2-A

Client Sample ID: Lab Control Sample

Matrix: Air

Prep Type: Total/NA

Analysis Batch: 56562

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec.
				mg/sample			Limits
Hydrochloric Acid	7.71	7.79			101	90 - 110	

Lab Sample ID: 320-9897-11 MS

Client Sample ID: I5-4

Matrix: Air

Prep Type: Total/NA

Analysis Batch: 56562

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec.
						mg/sample			Limits
Hydrochloric Acid	0.44		3.39	3.94			103	75 - 125	

Lab Sample ID: 320-9897-11 MSD

Client Sample ID: I5-4

Matrix: Air

Prep Type: Total/NA

Analysis Batch: 56562

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec.	RPD
						mg/sample			Limits	RPD
Hydrochloric Acid	0.44		3.39	4.05			106	75 - 125		3

Method: 0050/26A - Hydrogen Halide and Halogen Emissions/Stationary Sources (Mod)

Lab Sample ID: MB 320-56515/12

Client Sample ID: Method Blank

Matrix: Air

Prep Type: Total/NA

Analysis Batch: 56515

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		0.50	0.40	mg/L	-		10/27/14 15:10	1

Lab Sample ID: MB 320-56515/13

Client Sample ID: Method Blank

Matrix: Air

Prep Type: Total/NA

Analysis Batch: 56515

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		0.50	0.40	mg/L	-		10/27/14 15:25	1

Lab Sample ID: LCS 320-56515/14

Client Sample ID: Lab Control Sample

Matrix: Air

Prep Type: Total/NA

Analysis Batch: 56515

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec.
				mg/L			Limits
Chloride	7.50	7.55			101	90 - 110	

QC Sample Results

Client: SLR International Corp
Project/Site: Pogo Mine

TestAmerica Job ID: 320-9897-1

Method: 0050/26A - Hydrogen Halide and Halogen Emissions/Stationary Sources (Mod) **(Continued)**

Lab Sample ID: LCSD 320-56515/15

Matrix: Air

Analysis Batch: 56515

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte			Spike	LCSD	LCSD	Unit	D	%Rec	%Rec.	RPD	Limit	
	Result	Qualifier	Added	Result	Qualifier				mg/L			
Chloride			7.50	7.60					101	90 - 110	1	10

Lab Sample ID: 320-9897-11 MS

Matrix: Air

Analysis Batch: 56515

Client Sample ID: I5-4

Prep Type: Total/NA

Analyte			Spike	MS	MS	Unit	D	%Rec	%Rec.	RPD	Limit	
	Result	Qualifier	Added	Result	Qualifier				mg/L			
Chloride	0.64		5.00	5.80					103	90 - 110		

Lab Sample ID: 320-9897-11 MSD

Client Sample ID: I5-4

Prep Type: Total/NA

Analysis Batch: 56515

Analyte			Spike	MSD	MSD	Unit	D	%Rec	%Rec.	RPD	Limit	
	Result	Qualifier	Added	Result	Qualifier				mg/L			
Chloride	0.64		5.00	5.97					106	90 - 110	3	10

Method: 29/6020 - Metals (ICPMS), Stationary Source

Lab Sample ID: MB 320-55232/1-A

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 55232

Matrix: Air

Analysis Batch: 56212

Analyte			MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier	Added	Result	Qualifier	ug/Sample	10/22/14 09:00	10/23/14 22:28			1
Cadmium	ND			0.30	0.022	ug/Sample			10/22/14 09:00	10/23/14 22:28	
Lead	0.0441	J		0.30	0.020	ug/Sample			10/22/14 09:00	10/23/14 22:28	1

Lab Sample ID: LCS 320-55232/2-A

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 55232

Matrix: Air

Analysis Batch: 56212

Analyte			Spike	LCS	LCS	Unit	D	%Rec	%Rec.	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier	ug/Sample	95	Limits	79 - 110		
Cadmium			60.0	56.9					79 - 110		
Lead			60.0	59.5		ug/Sample	99	86 - 110			

Lab Sample ID: LCSD 320-55232/3-A

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 55232

Matrix: Air

Analysis Batch: 56212

Analyte			Spike	LCSD	LCSD	Unit	D	%Rec	%Rec.	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier	ug/Sample	93	Limits	79 - 110	2	16
Cadmium			60.0	56.0					79 - 110		
Lead			60.0	59.2		ug/Sample	99	86 - 110		1	15

Lab Sample ID: 320-9897-1 DU

Client Sample ID: I29-1

Prep Type: Total/NA

Prep Batch: 55232

Matrix: Air

Analysis Batch: 56212

Analyte			DU	DU	Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier	ug/Sample	3	20	
Cadmium			5.2					

TestAmerica Sacramento

QC Sample Results

Client: SLR International Corp
Project/Site: Pogo Mine

TestAmerica Job ID: 320-9897-1

Method: 29/6020 - Metals (ICPMS), Stationary Source (Continued)

Lab Sample ID: 320-9897-1 DU

Matrix: Air

Analysis Batch: 56212

Analyte	Sample	Sample	DU	DU	D	RPD	Limit
	Result	Qualifier	Result	Qualifier			
Lead	110	B	109		ug/Sample	2	20

Lab Sample ID: MB 320-55233/1-A

Matrix: Air

Analysis Batch: 56212

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Cadmium	ND		0.15	0.011	ug/Sample		10/22/14 12:00	10/23/14 23:04	1
Lead	0.0483	J	0.15	0.0099	ug/Sample		10/22/14 12:00	10/23/14 23:04	1

Lab Sample ID: LCS 320-55233/2-A

Matrix: Air

Analysis Batch: 56212

Analyte	Spike	LCS	LCS	Unit	D	%Rec.		RPD	Limit
	Added	Result	Qualifier			%Rec	Limits		
Cadmium	30.0	28.0		ug/Sample		93	79 - 110		
Lead	30.0	29.4		ug/Sample		98	86 - 110		

Lab Sample ID: LCSD 320-55233/3-B

Matrix: Air

Analysis Batch: 56212

Analyte	Spike	LCSD	LCSD	Unit	D	%Rec.		RPD	Limit
	Added	Result	Qualifier			%Rec	Limits		
Cadmium	30.0	28.5		ug/Sample		95	79 - 110	2	16
Lead	30.0	30.0		ug/Sample		100	86 - 110	2	15

Lab Sample ID: MB 320-55234/1-A

Matrix: Air

Analysis Batch: 56212

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Cadmium	ND		0.15	0.011	ug/Sample		10/22/14 09:00	10/23/14 22:38	1
Lead	ND		0.15	0.0099	ug/Sample		10/22/14 09:00	10/23/14 22:38	1

Lab Sample ID: LCS 320-55234/2-A

Matrix: Air

Analysis Batch: 56212

Analyte	Spike	LCS	LCS	Unit	D	%Rec.		RPD	Limit
	Added	Result	Qualifier			%Rec	Limits		
Cadmium	30.0	28.4		ug/Sample		95	79 - 110		
Lead	30.0	29.5		ug/Sample		98	86 - 110		

Lab Sample ID: LCSD 320-55234/3-B

Matrix: Air

Analysis Batch: 56212

Analyte	Spike	LCSD	LCSD	Unit	D	%Rec.		RPD	Limit
	Added	Result	Qualifier			%Rec	Limits		
Cadmium	30.0	28.7		ug/Sample		96	79 - 110	1	16
Lead	30.0	29.3		ug/Sample		98	86 - 110	1	15

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 55234

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 55234

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 55234

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 55234

TestAmerica Sacramento

QC Sample Results

Client: SLR International Corp
Project/Site: Pogo Mine

TestAmerica Job ID: 320-9897-1

Method: 29/7470A - Mercury - HCI

Lab Sample ID: MB 320-55228/1-C

Matrix: Air

Analysis Batch: 56443

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 56215

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND		0.20	0.049	ug/Sample		10/27/14 10:32	10/27/14 13:19	1

Lab Sample ID: LCS 320-55228/2-C

Matrix: Air

Analysis Batch: 56443

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 56215

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Hg	1.00	1.00		ug/Sample		100	85 - 115

Lab Sample ID: LCSD 320-55228/3-C

Matrix: Air

Analysis Batch: 56443

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 56215

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	RPD	Limit
Hg	1.00	1.00		ug/Sample		100	85 - 115	0 20

Method: 29/7470A - Mercury - Empty

Lab Sample ID: MB 320-55229/1-B

Matrix: Air

Analysis Batch: 55595

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 55537

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND		2.0	0.49	ug/Sample		10/17/14 09:34	10/17/14 11:40	1

Lab Sample ID: LCS 320-55229/2-B

Matrix: Air

Analysis Batch: 55595

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 55537

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Hg	10.0	10.2		ug/Sample		102	85 - 115

Lab Sample ID: LCSD 320-55229/3-B

Matrix: Air

Analysis Batch: 55595

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 55537

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	RPD	Limit
Hg	10.0	9.36		ug/Sample		94	85 - 115	9 20

Method: 29/7470A - Mercury - Front Half

Lab Sample ID: MB 320-55227/1-B

Matrix: Air

Analysis Batch: 56443

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 56214

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND		0.030	0.0074	ug/Sample		10/27/14 09:24	10/27/14 13:13	1

TestAmerica Sacramento

QC Sample Results

Client: SLR International Corp
Project/Site: Pogo Mine

TestAmerica Job ID: 320-9897-1

Method: 29/7470A - Mercury - Front Half (Continued)

Lab Sample ID: LCS 320-55227/2-B

Matrix: Air

Analysis Batch: 56443

Analyte	Spike	LCS	LCS	Unit	D	%Rec	%Rec.
	Added	Result	Qualifier				
Hg	0.150	0.148		ug/Sample		99	85 - 115

Lab Sample ID: LCSD 320-55227/3-B

Matrix: Air

Analysis Batch: 56443

Analyte	Spike	LCSD	LCSD	Unit	D	%Rec	%Rec.	RPD	Limit
	Added	Result	Qualifier						
Hg	0.150	0.147		ug/Sample		98	85 - 115	1	20

Method: 29/7470A - Mercury - Permanganate

Lab Sample ID: MB 320-55228/1-B

Matrix: Air

Analysis Batch: 55595

Analyte	MB	MB	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier									
Hg		ND			0.20	0.049	ug/Sample		10/17/14 09:34	10/17/14 11:23	1

Lab Sample ID: LCS 320-55228/2-B

Matrix: Air

Analysis Batch: 55595

Analyte	Spike	LCS	LCS	Unit	D	%Rec	%Rec.
	Added	Result	Qualifier				
Hg	1.00	1.02		ug/Sample		102	85 - 115

Lab Sample ID: LCSD 320-55228/3-B

Matrix: Air

Analysis Batch: 55595

Analyte	Spike	LCSD	LCSD	Unit	D	%Rec	%Rec.	RPD
	Added	Result	Qualifier					
Hg	1.00	0.987		ug/Sample		99	85 - 115	3

Method: 29/7470A - Mercury - Nitric/Peroxide

Lab Sample ID: MB 320-55230/1-B

Matrix: Air

Analysis Batch: 55595

Analyte	MB	MB	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier									
Hg		ND			2.0	0.49	ug/Sample		10/17/14 09:34	10/17/14 11:29	1

Lab Sample ID: LCS 320-55230/2-B

Matrix: Air

Analysis Batch: 55595

Analyte	Spike	LCS	LCS	Unit	D	%Rec	%Rec.
	Added	Result	Qualifier				
Hg	10.0	9.89		ug/Sample		99	85 - 115

TestAmerica Sacramento

QC Sample Results

Client: SLR International Corp
Project/Site: Pogo Mine

TestAmerica Job ID: 320-9897-1

Method: 29/7470A - Mercury - Nitric/Peroxide (Continued)

Lab Sample ID: LCSD 320-55230/3-B

Matrix: Air

Analysis Batch: 55595

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 55535

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec.	RPD
Hg	10.0	9.50		ug/Sample		95	85 - 115

Lab Sample ID: 320-9897-1 MS

Matrix: Air

Analysis Batch: 55595

Client Sample ID: I29-1

Prep Type: Total/NA

Prep Batch: 55535

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec.	Limits	
Hg	ND		7.40	6.63		ug/Sample		90	85 - 115	

Lab Sample ID: 320-9897-1 MSD

Matrix: Air

Analysis Batch: 55595

Client Sample ID: I29-1

Prep Type: Total/NA

Prep Batch: 55535

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec.	RPD
Hg	ND		7.40	6.75		ug/Sample		91	85 - 115

QC Association Summary

Client: SLR International Corp
Project/Site: Pogo Mine

TestAmerica Job ID: 320-9897-1

HPLC/IC

Analysis Batch: 56515

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-9897-7	PEA1941	Total/NA	Air	0050/26A	
320-9897-7	PEA1941	Total/NA	Air	0050/26A	
320-9897-8	I5-1	Total/NA	Air	0050/26A	
320-9897-8	I5-1	Total/NA	Air	0050/26A	
320-9897-9	I5-2	Total/NA	Air	0050/26A	
320-9897-9	I5-2	Total/NA	Air	0050/26A	
320-9897-10	I5-3	Total/NA	Air	0050/26A	
320-9897-10	I5-3	Total/NA	Air	0050/26A	
320-9897-11	I5-4	Total/NA	Air	0050/26A	
320-9897-11	I5-4	Total/NA	Air	0050/26A	
320-9897-11 MS	I5-4	Total/NA	Air	0050/26A	
320-9897-11 MSD	I5-4	Total/NA	Air	0050/26A	
320-9897-12	I5 BLANK	Total/NA	Air	0050/26A	
320-9897-12	I5 BLANK	Total/NA	Air	0050/26A	
LCS 320-56515/14	Lab Control Sample	Total/NA	Air	0050/26A	
LCSD 320-56515/15	Lab Control Sample Dup	Total/NA	Air	0050/26A	
MB 320-56515/12	Method Blank	Total/NA	Air	0050/26A	
MB 320-56515/13	Method Blank	Total/NA	Air	0050/26A	

Pre Prep Batch: 56555

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-9897-7	PEA1941	Total/NA	Air	Air Train Vol.	
320-9897-8	I5-1	Total/NA	Air	Air Train Vol.	
320-9897-9	I5-2	Total/NA	Air	Air Train Vol.	
320-9897-10	I5-3	Total/NA	Air	Air Train Vol.	
320-9897-11	I5-4	Total/NA	Air	Air Train Vol.	
320-9897-11 MS	I5-4	Total/NA	Air	Air Train Vol.	
320-9897-11 MSD	I5-4	Total/NA	Air	Air Train Vol.	
320-9897-12	I5 BLANK	Total/NA	Air	Air Train Vol.	
LCS 320-56555/2-A	Lab Control Sample	Total/NA	Air	Air Train Vol.	
MB 320-56555/1-A	Method Blank	Total/NA	Air	Air Train Vol.	

Analysis Batch: 56562

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-9897-7	PEA1941	Total/NA	Air	0050/26A	56555
320-9897-8	I5-1	Total/NA	Air	0050/26A	56555
320-9897-9	I5-2	Total/NA	Air	0050/26A	56555
320-9897-10	I5-3	Total/NA	Air	0050/26A	56555
320-9897-11	I5-4	Total/NA	Air	0050/26A	56555
320-9897-11 MS	I5-4	Total/NA	Air	0050/26A	56555
320-9897-11 MSD	I5-4	Total/NA	Air	0050/26A	56555
320-9897-12	I5 BLANK	Total/NA	Air	0050/26A	56555
LCS 320-56555/2-A	Lab Control Sample	Total/NA	Air	0050/26A	56555
MB 320-56555/1-A	Method Blank	Total/NA	Air	0050/26A	56555

Metals

Pre Prep Batch: 55227

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-9897-1	I29-1	Total/NA	Air	Air Train Vol.	

TestAmerica Sacramento

QC Association Summary

Client: SLR International Corp
Project/Site: Pogo Mine

TestAmerica Job ID: 320-9897-1

Metals (Continued)

Pre Prep Batch: 55227 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-9897-2	I29-2	Total/NA	Air	Air Train Vol.	
320-9897-3	I29-3	Total/NA	Air	Air Train Vol.	
320-9897-4	I29-BLANK	Total/NA	Air	Air Train Vol.	
LCS 320-55227/2-B	Lab Control Sample	Total/NA	Air	Air Train Vol.	
LCSD 320-55227/3-B	Lab Control Sample Dup	Total/NA	Air	Air Train Vol.	
MB 320-55227/1-B	Method Blank	Total/NA	Air	Air Train Vol.	

Pre Prep Batch: 55228

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-9897-1	I29-1	Total/NA	Air	Air Train Vol.	
320-9897-2	I29-2	Total/NA	Air	Air Train Vol.	
320-9897-3	I29-3	Total/NA	Air	Air Train Vol.	
320-9897-4	I29-BLANK	Total/NA	Air	Air Train Vol.	
320-9897-4	I29-BLANK	Total/NA	Air	Air Train Vol.	
LCS 320-55228/2-B	Lab Control Sample	Total/NA	Air	Air Train Vol.	
LCS 320-55228/2-C	Lab Control Sample	Total/NA	Air	Air Train Vol.	
LCSD 320-55228/3-B	Lab Control Sample Dup	Total/NA	Air	Air Train Vol.	
LCSD 320-55228/3-C	Lab Control Sample Dup	Total/NA	Air	Air Train Vol.	
MB 320-55228/1-B	Method Blank	Total/NA	Air	Air Train Vol.	
MB 320-55228/1-C	Method Blank	Total/NA	Air	Air Train Vol.	

Pre Prep Batch: 55229

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-9897-1	I29-1	Total/NA	Air	Air Train Vol.	
320-9897-2	I29-2	Total/NA	Air	Air Train Vol.	
320-9897-3	I29-3	Total/NA	Air	Air Train Vol.	
320-9897-4	I29-BLANK	Total/NA	Air	Air Train Vol.	
LCS 320-55229/2-B	Lab Control Sample	Total/NA	Air	Air Train Vol.	
LCSD 320-55229/3-B	Lab Control Sample Dup	Total/NA	Air	Air Train Vol.	
MB 320-55229/1-B	Method Blank	Total/NA	Air	Air Train Vol.	

Pre Prep Batch: 55230

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-9897-1	I29-1	Total/NA	Air	Air Train Vol.	
320-9897-1 MS	I29-1	Total/NA	Air	Air Train Vol.	
320-9897-1 MSD	I29-1	Total/NA	Air	Air Train Vol.	
320-9897-2	I29-2	Total/NA	Air	Air Train Vol.	
320-9897-3	I29-3	Total/NA	Air	Air Train Vol.	
320-9897-4	I29-BLANK	Total/NA	Air	Air Train Vol.	
LCS 320-55230/2-B	Lab Control Sample	Total/NA	Air	Air Train Vol.	
LCSD 320-55230/3-B	Lab Control Sample Dup	Total/NA	Air	Air Train Vol.	
MB 320-55230/1-B	Method Blank	Total/NA	Air	Air Train Vol.	

Prep Batch: 55232

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-9897-1	I29-1	Total/NA	Air	Air Train Prep	
320-9897-1 DU	I29-1	Total/NA	Air	Air Train Prep	
320-9897-1 PDS	I29-1	Total/NA	Air	Air Train Prep	
320-9897-1 SD	I29-1	Total/NA	Air	Air Train Prep	
320-9897-2	I29-2	Total/NA	Air	Air Train Prep	
320-9897-3	I29-3	Total/NA	Air	Air Train Prep	

TestAmerica Sacramento

QC Association Summary

Client: SLR International Corp
Project/Site: Pogo Mine

TestAmerica Job ID: 320-9897-1

Metals (Continued)

Prep Batch: 55232 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-9897-4	I29-BLANK	Total/NA	Air	Air Train Prep	
LCS 320-55232/2-A	Lab Control Sample	Total/NA	Air	Air Train Prep	
LCSD 320-55232/3-A	Lab Control Sample Dup	Total/NA	Air	Air Train Prep	
MB 320-55232/1-A	Method Blank	Total/NA	Air	Air Train Prep	

Prep Batch: 55233

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-9897-6	PEA1948	Total/NA	Air	Air Train Prep	
LCS 320-55233/2-A	Lab Control Sample	Total/NA	Air	Air Train Prep	
LCSD 320-55233/3-B	Lab Control Sample Dup	Total/NA	Air	Air Train Prep	
MB 320-55233/1-A	Method Blank	Total/NA	Air	Air Train Prep	

Prep Batch: 55234

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-9897-5	PEA1945	Total/NA	Air	Air Tain Prep	
LCS 320-55234/2-A	Lab Control Sample	Total/NA	Air	Air Tain Prep	
LCSD 320-55234/3-B	Lab Control Sample Dup	Total/NA	Air	Air Tain Prep	
MB 320-55234/1-A	Method Blank	Total/NA	Air	Air Tain Prep	

Prep Batch: 55534

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-9897-1	I29-1	Total/NA	Air	AT Prep (Per)	55228
320-9897-2	I29-2	Total/NA	Air	AT Prep (Per)	55228
320-9897-3	I29-3	Total/NA	Air	AT Prep (Per)	55228
320-9897-4	I29-BLANK	Total/NA	Air	AT Prep (Per)	55228
LCS 320-55228/2-B	Lab Control Sample	Total/NA	Air	AT Prep (Per)	55228
LCSD 320-55228/3-B	Lab Control Sample Dup	Total/NA	Air	AT Prep (Per)	55228
MB 320-55228/1-B	Method Blank	Total/NA	Air	AT Prep (Per)	55228

Prep Batch: 55535

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-9897-1	I29-1	Total/NA	Air	AT Prep (BH)	55230
320-9897-1 MS	I29-1	Total/NA	Air	AT Prep (BH)	55230
320-9897-1 MSD	I29-1	Total/NA	Air	AT Prep (BH)	55230
320-9897-2	I29-2	Total/NA	Air	AT Prep (BH)	55230
320-9897-3	I29-3	Total/NA	Air	AT Prep (BH)	55230
320-9897-4	I29-BLANK	Total/NA	Air	AT Prep (BH)	55230
LCS 320-55230/2-B	Lab Control Sample	Total/NA	Air	AT Prep (BH)	55230
LCSD 320-55230/3-B	Lab Control Sample Dup	Total/NA	Air	AT Prep (BH)	55230
MB 320-55230/1-B	Method Blank	Total/NA	Air	AT Prep (BH)	55230

Prep Batch: 55537

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-9897-1	I29-1	Total/NA	Air	AT Prep (Empty)	55229
320-9897-2	I29-2	Total/NA	Air	AT Prep (Empty)	55229
320-9897-3	I29-3	Total/NA	Air	AT Prep (Empty)	55229
320-9897-4	I29-BLANK	Total/NA	Air	AT Prep (Empty)	55229
LCS 320-55229/2-B	Lab Control Sample	Total/NA	Air	AT Prep (Empty)	55229
LCSD 320-55229/3-B	Lab Control Sample Dup	Total/NA	Air	AT Prep (Empty)	55229
MB 320-55229/1-B	Method Blank	Total/NA	Air	AT Prep (Empty)	55229

TestAmerica Sacramento

QC Association Summary

Client: SLR International Corp
Project/Site: Pogo Mine

TestAmerica Job ID: 320-9897-1

Metals (Continued)

Analysis Batch: 55595

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-9897-1	I29-1	Total/NA	Air	29/7470A	55534
320-9897-1	I29-1	Total/NA	Air	29/7470A	55535
320-9897-1	I29-1	Total/NA	Air	29/7470A	55537
320-9897-1 MS	I29-1	Total/NA	Air	29/7470A	55535
320-9897-1 MSD	I29-1	Total/NA	Air	29/7470A	55535
320-9897-2	I29-2	Total/NA	Air	29/7470A	55534
320-9897-2	I29-2	Total/NA	Air	29/7470A	55535
320-9897-2	I29-2	Total/NA	Air	29/7470A	55537
320-9897-3	I29-3	Total/NA	Air	29/7470A	55534
320-9897-3	I29-3	Total/NA	Air	29/7470A	55535
320-9897-3	I29-3	Total/NA	Air	29/7470A	55537
320-9897-4	I29-BLANK	Total/NA	Air	29/7470A	55534
320-9897-4	I29-BLANK	Total/NA	Air	29/7470A	55535
320-9897-4	I29-BLANK	Total/NA	Air	29/7470A	55537
LCS 320-55228/2-B	Lab Control Sample	Total/NA	Air	29/7470A	55534
LCS 320-55229/2-B	Lab Control Sample	Total/NA	Air	29/7470A	55537
LCS 320-55230/2-B	Lab Control Sample	Total/NA	Air	29/7470A	55535
LCSD 320-55228/3-B	Lab Control Sample Dup	Total/NA	Air	29/7470A	55534
LCSD 320-55229/3-B	Lab Control Sample Dup	Total/NA	Air	29/7470A	55537
LCSD 320-55230/3-B	Lab Control Sample Dup	Total/NA	Air	29/7470A	55535
MB 320-55228/1-B	Method Blank	Total/NA	Air	29/7470A	55534
MB 320-55229/1-B	Method Blank	Total/NA	Air	29/7470A	55537
MB 320-55230/1-B	Method Blank	Total/NA	Air	29/7470A	55535

Analysis Batch: 56212

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-9897-1	I29-1	Total/NA	Air	29/6020	55232
320-9897-1 DU	I29-1	Total/NA	Air	29/6020	55232
320-9897-1 PDS	I29-1	Total/NA	Air	29/6020	55232
320-9897-1 SD	I29-1	Total/NA	Air	29/6020	55232
320-9897-2	I29-2	Total/NA	Air	29/6020	55232
320-9897-3	I29-3	Total/NA	Air	29/6020	55232
320-9897-4	I29-BLANK	Total/NA	Air	29/6020	55232
320-9897-5	PEA1945	Total/NA	Air	29/6020	55234
320-9897-6	PEA1948	Total/NA	Air	29/6020	55233
ICSA 320-56212/13	ICS		Air	29/6020	
ICSA 320-56212/14	ICS		Air	29/6020	
LCS 320-55232/2-A	Lab Control Sample	Total/NA	Air	29/6020	55232
LCS 320-55233/2-A	Lab Control Sample	Total/NA	Air	29/6020	55233
LCS 320-55234/2-A	Lab Control Sample	Total/NA	Air	29/6020	55234
LCSD 320-55232/3-A	Lab Control Sample Dup	Total/NA	Air	29/6020	55232
LCSD 320-55233/3-B	Lab Control Sample Dup	Total/NA	Air	29/6020	55233
LCSD 320-55234/3-B	Lab Control Sample Dup	Total/NA	Air	29/6020	55234
MB 320-55232/1-A	Method Blank	Total/NA	Air	29/6020	55232
MB 320-55233/1-A	Method Blank	Total/NA	Air	29/6020	55233
MB 320-55234/1-A	Method Blank	Total/NA	Air	29/6020	55234

Prep Batch: 56214

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-9897-1	I29-1	Total/NA	Air	AT Hg Prep (FH)	55227
320-9897-2	I29-2	Total/NA	Air	AT Hg Prep (FH)	55227

TestAmerica Sacramento

QC Association Summary

Client: SLR International Corp
Project/Site: Pogo Mine

TestAmerica Job ID: 320-9897-1

Metals (Continued)

Prep Batch: 56214 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-9897-3	I29-3	Total/NA	Air	AT Hg Prep (FH)	55227
320-9897-4	I29-BLANK	Total/NA	Air	AT Hg Prep (FH)	55227
LCS 320-55227/2-B	Lab Control Sample	Total/NA	Air	AT Hg Prep (FH)	55227
LCSD 320-55227/3-B	Lab Control Sample Dup	Total/NA	Air	AT Hg Prep (FH)	55227
MB 320-55227/1-B	Method Blank	Total/NA	Air	AT Hg Prep (FH)	55227

Prep Batch: 56215

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-9897-1	I29-1	Total/NA	Air	AT (HCl)	55228
320-9897-2	I29-2	Total/NA	Air	AT (HCl)	55228
320-9897-3	I29-3	Total/NA	Air	AT (HCl)	55228
320-9897-4	I29-BLANK	Total/NA	Air	AT (HCl)	55228
LCS 320-55228/2-C	Lab Control Sample	Total/NA	Air	AT (HCl)	55228
LCSD 320-55228/3-C	Lab Control Sample Dup	Total/NA	Air	AT (HCl)	55228
MB 320-55228/1-C	Method Blank	Total/NA	Air	AT (HCl)	55228

Analysis Batch: 56443

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-9897-1	I29-1	Total/NA	Air	29/7470A	56214
320-9897-1	I29-1	Total/NA	Air	29/7470A	56215
320-9897-2	I29-2	Total/NA	Air	29/7470A	56214
320-9897-2	I29-2	Total/NA	Air	29/7470A	56215
320-9897-3	I29-3	Total/NA	Air	29/7470A	56214
320-9897-3	I29-3	Total/NA	Air	29/7470A	56215
320-9897-4	I29-BLANK	Total/NA	Air	29/7470A	56214
320-9897-4	I29-BLANK	Total/NA	Air	29/7470A	56215
LCS 320-55227/2-B	Lab Control Sample	Total/NA	Air	29/7470A	56214
LCS 320-55228/2-C	Lab Control Sample	Total/NA	Air	29/7470A	56215
LCSD 320-55227/3-B	Lab Control Sample Dup	Total/NA	Air	29/7470A	56214
LCSD 320-55228/3-C	Lab Control Sample Dup	Total/NA	Air	29/7470A	56215
MB 320-55227/1-B	Method Blank	Total/NA	Air	29/7470A	56214
MB 320-55228/1-C	Method Blank	Total/NA	Air	29/7470A	56215

Lab Chronicle

Client: SLR International Corp
Project/Site: Pogo Mine

TestAmerica Job ID: 320-9897-1

Client Sample ID: I29-1

Date Collected: 10/07/14 00:00

Date Received: 10/13/14 08:50

Lab Sample ID: 320-9897-1

Matrix: Air

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Air Train Prep			55232	10/22/14 09:00	CV1	TAL SAC
Total/NA	Analysis	29/6020		1	56212	10/24/14 01:05	TTP	TAL SAC
Total/NA	Pre Prep	Air Train Vol.			55228	10/14/14 17:00	CV1	TAL SAC
Total/NA	Prep	AT Prep (Per)			55534	10/17/14 09:34	CV1	TAL SAC
Total/NA	Analysis	29/7470A		1	55595	10/17/14 11:56	CV1	TAL SAC
Total/NA	Pre Prep	Air Train Vol.			55230	10/14/14 17:00	CV1	TAL SAC
Total/NA	Prep	AT Prep (BH)			55535	10/17/14 09:34	CV1	TAL SAC
Total/NA	Analysis	29/7470A		1	55595	10/17/14 12:08	CV1	TAL SAC
Total/NA	Pre Prep	Air Train Vol.			55229	10/14/14 17:00	CV1	TAL SAC
Total/NA	Prep	AT Prep (Empty)			55537	10/17/14 09:34	CV1	TAL SAC
Total/NA	Analysis	29/7470A		1	55595	10/17/14 12:20	CV1	TAL SAC
Total/NA	Pre Prep	Air Train Vol.			55227	10/14/14 17:00	CV1	TAL SAC
Total/NA	Prep	AT Hg Prep (FH)			56214	10/27/14 09:24	CV1	TAL SAC
Total/NA	Analysis	29/7470A		1	56443	10/27/14 13:42	CV1	TAL SAC
Total/NA	Pre Prep	Air Train Vol.			55228	10/14/14 17:00	CV1	TAL SAC
Total/NA	Prep	AT (HCl)			56215	10/27/14 10:32	CV1	TAL SAC
Total/NA	Analysis	29/7470A		1	56443	10/27/14 13:54	CV1	TAL SAC

Client Sample ID: I29-2

Date Collected: 10/08/14 00:00

Date Received: 10/13/14 08:50

Lab Sample ID: 320-9897-2

Matrix: Air

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Air Train Prep			55232	10/22/14 09:00	CV1	TAL SAC
Total/NA	Analysis	29/6020		1	56212	10/24/14 01:30	TTP	TAL SAC
Total/NA	Pre Prep	Air Train Vol.			55228	10/14/14 17:00	CV1	TAL SAC
Total/NA	Prep	AT Prep (Per)			55534	10/17/14 09:34	CV1	TAL SAC
Total/NA	Analysis	29/7470A		1	55595	10/17/14 11:58	CV1	TAL SAC
Total/NA	Pre Prep	Air Train Vol.			55230	10/14/14 17:00	CV1	TAL SAC
Total/NA	Prep	AT Prep (BH)			55535	10/17/14 09:34	CV1	TAL SAC
Total/NA	Analysis	29/7470A		1	55595	10/17/14 12:14	CV1	TAL SAC
Total/NA	Pre Prep	Air Train Vol.			55229	10/14/14 17:00	CV1	TAL SAC
Total/NA	Prep	AT Prep (Empty)			55537	10/17/14 09:34	CV1	TAL SAC
Total/NA	Analysis	29/7470A		1	55595	10/17/14 12:22	CV1	TAL SAC
Total/NA	Pre Prep	Air Train Vol.			55227	10/14/14 17:00	CV1	TAL SAC
Total/NA	Prep	AT Hg Prep (FH)			56214	10/27/14 09:24	CV1	TAL SAC
Total/NA	Analysis	29/7470A		1	56443	10/27/14 13:44	CV1	TAL SAC
Total/NA	Pre Prep	Air Train Vol.			55228	10/14/14 17:00	CV1	TAL SAC
Total/NA	Prep	AT (HCl)			56215	10/27/14 10:32	CV1	TAL SAC
Total/NA	Analysis	29/7470A		1	56443	10/27/14 13:56	CV1	TAL SAC

TestAmerica Sacramento

Lab Chronicle

Client: SLR International Corp
Project/Site: Pogo Mine

TestAmerica Job ID: 320-9897-1

Client Sample ID: I29-3

Date Collected: 10/08/14 00:00

Date Received: 10/13/14 08:50

Lab Sample ID: 320-9897-3

Matrix: Air

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Air Train Prep			55232	10/22/14 09:00	CV1	TAL SAC
Total/NA	Analysis	29/6020		1	56212	10/24/14 01:34	TTP	TAL SAC
Total/NA	Pre Prep	Air Train Vol.			55228	10/14/14 17:00	CV1	TAL SAC
Total/NA	Prep	AT Prep (Per)			55534	10/17/14 09:34	CV1	TAL SAC
Total/NA	Analysis	29/7470A		1	55595	10/17/14 12:04	CV1	TAL SAC
Total/NA	Pre Prep	Air Train Vol.			55230	10/14/14 17:00	CV1	TAL SAC
Total/NA	Prep	AT Prep (BH)			55535	10/17/14 09:34	CV1	TAL SAC
Total/NA	Analysis	29/7470A		1	55595	10/17/14 12:16	CV1	TAL SAC
Total/NA	Pre Prep	Air Train Vol.			55229	10/14/14 17:00	CV1	TAL SAC
Total/NA	Prep	AT Prep (Empty)			55537	10/17/14 09:34	CV1	TAL SAC
Total/NA	Analysis	29/7470A		1	55595	10/17/14 12:27	CV1	TAL SAC
Total/NA	Pre Prep	Air Train Vol.			55227	10/14/14 17:00	CV1	TAL SAC
Total/NA	Prep	AT Hg Prep (FH)			56214	10/27/14 09:24	CV1	TAL SAC
Total/NA	Analysis	29/7470A		1	56443	10/27/14 13:46	CV1	TAL SAC
Total/NA	Pre Prep	Air Train Vol.			55228	10/14/14 17:00	CV1	TAL SAC
Total/NA	Prep	AT (HCl)			56215	10/27/14 10:32	CV1	TAL SAC
Total/NA	Analysis	29/7470A		1	56443	10/27/14 13:58	CV1	TAL SAC

Client Sample ID: I29-BLANK

Date Collected: 10/08/14 00:00

Date Received: 10/13/14 08:50

Lab Sample ID: 320-9897-4

Matrix: Air

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Air Train Prep			55232	10/22/14 09:00	CV1	TAL SAC
Total/NA	Analysis	29/6020		1	56212	10/24/14 01:37	TTP	TAL SAC
Total/NA	Pre Prep	Air Train Vol.			55228	10/14/14 17:00	CV1	TAL SAC
Total/NA	Prep	AT Prep (Per)			55534	10/17/14 09:34	CV1	TAL SAC
Total/NA	Analysis	29/7470A		1	55595	10/17/14 12:06	CV1	TAL SAC
Total/NA	Pre Prep	Air Train Vol.			55230	10/14/14 17:00	CV1	TAL SAC
Total/NA	Prep	AT Prep (BH)			55535	10/17/14 09:34	CV1	TAL SAC
Total/NA	Analysis	29/7470A		1	55595	10/17/14 12:18	CV1	TAL SAC
Total/NA	Pre Prep	Air Train Vol.			55229	10/14/14 17:00	CV1	TAL SAC
Total/NA	Prep	AT Prep (Empty)			55537	10/17/14 09:34	CV1	TAL SAC
Total/NA	Analysis	29/7470A		1	55595	10/17/14 12:29	CV1	TAL SAC
Total/NA	Pre Prep	Air Train Vol.			55227	10/14/14 17:00	CV1	TAL SAC
Total/NA	Prep	AT Hg Prep (FH)			56214	10/27/14 09:24	CV1	TAL SAC
Total/NA	Analysis	29/7470A		1	56443	10/27/14 13:52	CV1	TAL SAC
Total/NA	Pre Prep	Air Train Vol.			55228	10/14/14 17:00	CV1	TAL SAC
Total/NA	Prep	AT (HCl)			56215	10/27/14 10:32	CV1	TAL SAC
Total/NA	Analysis	29/7470A		1	56443	10/27/14 14:00	CV1	TAL SAC

TestAmerica Sacramento

Lab Chronicle

Client: SLR International Corp
Project/Site: Pogo Mine

TestAmerica Job ID: 320-9897-1

Client Sample ID: PEA1945

Lab Sample ID: 320-9897-5

Matrix: Air

Date Collected: 10/08/14 00:00
Date Received: 10/13/14 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Air Train Prep			55234	10/22/14 09:00	CV1	TAL SAC
Total/NA	Analysis	29/6020		1	56212	10/24/14 02:03	TTP	TAL SAC

Client Sample ID: PEA1948

Lab Sample ID: 320-9897-6

Matrix: Air

Date Collected: 10/08/14 00:00
Date Received: 10/13/14 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Air Train Prep			55233	10/22/14 12:00	CV1	TAL SAC
Total/NA	Analysis	29/6020		1	56212	10/24/14 02:36	TTP	TAL SAC

Client Sample ID: PEA1941

Lab Sample ID: 320-9897-7

Matrix: Air

Date Collected: 10/08/14 00:00
Date Received: 10/13/14 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Pre Prep	Air Train Vol.			56555	10/20/14 14:00	LW1	TAL SAC
Total/NA	Analysis	0050/26A		10	56562	10/27/14 16:08	LW1	TAL SAC
Total/NA	Analysis	0050/26A		10	56515	10/27/14 16:08	LW1	TAL SAC
Total/NA	Analysis	0050/26A		10	56515	10/27/14 16:23	LW1	TAL SAC

Client Sample ID: I5-1

Lab Sample ID: 320-9897-8

Matrix: Air

Date Collected: 10/07/14 00:00
Date Received: 10/13/14 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Pre Prep	Air Train Vol.			56555	10/20/14 14:00	LW1	TAL SAC
Total/NA	Analysis	0050/26A		1	56562	10/27/14 16:37	LW1	TAL SAC
Total/NA	Analysis	0050/26A		1	56515	10/27/14 16:37	LW1	TAL SAC
Total/NA	Analysis	0050/26A		1	56515	10/27/14 16:52	LW1	TAL SAC

Client Sample ID: I5-2

Lab Sample ID: 320-9897-9

Matrix: Air

Date Collected: 10/08/14 00:00
Date Received: 10/13/14 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Pre Prep	Air Train Vol.			56555	10/20/14 14:00	LW1	TAL SAC
Total/NA	Analysis	0050/26A		1	56562	10/27/14 17:06	LW1	TAL SAC
Total/NA	Analysis	0050/26A		1	56515	10/27/14 17:06	LW1	TAL SAC
Total/NA	Analysis	0050/26A		1	56515	10/27/14 17:21	LW1	TAL SAC

TestAmerica Sacramento

Lab Chronicle

Client: SLR International Corp
Project/Site: Pogo Mine

TestAmerica Job ID: 320-9897-1

Client Sample ID: I5-3

Lab Sample ID: 320-9897-10

Matrix: Air

Date Collected: 10/08/14 00:00

Date Received: 10/13/14 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Pre Prep	Air Train Vol.			56555	10/20/14 14:00	LW1	TAL SAC
Total/NA	Analysis	0050/26A		1	56562	10/27/14 18:19	LW1	TAL SAC
Total/NA	Analysis	0050/26A		1	56515	10/27/14 18:19	LW1	TAL SAC
Total/NA	Analysis	0050/26A		1	56515	10/27/14 18:33	LW1	TAL SAC

Client Sample ID: I5-4

Lab Sample ID: 320-9897-11

Matrix: Air

Date Collected: 10/09/14 00:00

Date Received: 10/13/14 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Pre Prep	Air Train Vol.			56555	10/20/14 14:00	LW1	TAL SAC
Total/NA	Analysis	0050/26A		1	56562	10/27/14 18:48	LW1	TAL SAC
Total/NA	Analysis	0050/26A		1	56515	10/27/14 18:48	LW1	TAL SAC
Total/NA	Analysis	0050/26A		1	56515	10/27/14 19:02	LW1	TAL SAC

Client Sample ID: I5 BLANK

Lab Sample ID: 320-9897-12

Matrix: Air

Date Collected: 10/09/14 00:00

Date Received: 10/13/14 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Pre Prep	Air Train Vol.			56555	10/20/14 14:00	LW1	TAL SAC
Total/NA	Analysis	0050/26A		1	56562	10/27/14 19:46	LW1	TAL SAC
Total/NA	Analysis	0050/26A		1	56515	10/27/14 19:46	LW1	TAL SAC
Total/NA	Analysis	0050/26A		1	56515	10/27/14 20:00	LW1	TAL SAC

Laboratory References:

TAL SAC = TestAmerica Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Certification Summary

Client: SLR International Corp
Project/Site: Pogo Mine

TestAmerica Job ID: 320-9897-1

Laboratory: TestAmerica Sacramento

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
A2LA	DoD ELAP		2928-01	01-31-16
Alaska (UST)	State Program	10	UST-055	12-18-14
Arizona	State Program	9	AZ0708	08-11-15
Arkansas DEQ	State Program	6	88-0691	06-17-15
California	State Program	9	2897	01-31-15
Colorado	State Program	8	N/A	08-31-15
Connecticut	State Program	1	PH-0691	06-30-15
Florida	NELAP	4	E87570	06-30-15
Hawaii	State Program	9	N/A	01-29-15
Illinois	NELAP	5	200060	03-17-15
Kansas	NELAP	7	E-10375	10-31-14 *
Louisiana	NELAP	6	30612	06-30-15
Michigan	State Program	5	9947	01-31-15
Nebraska	State Program	7	NE-OS-22-13	01-29-15
Nevada	State Program	9	CA44	07-31-15
New Jersey	NELAP	2	CA005	06-30-15
New York	NELAP	2	11666	04-01-15
Oregon	NELAP	10	CA200005	01-29-15
Oregon	NELAP Secondary AB	10	E87570	06-30-15
Pennsylvania	NELAP	3	9947	03-31-15
Texas	NELAP	6	T104704399-08-TX	05-31-15
US Fish & Wildlife	Federal		LE148388-0	12-31-14
USDA	Federal		P330-11-00436	12-30-14
USEPA UCMR	Federal	1	CA00044	11-06-16
Utah	NELAP	8	QUAN1	02-28-15
Washington	State Program	10	C581	05-05-15
West Virginia (DW)	State Program	3	9930C	12-31-14
Wyoming	State Program	8	8TMS-Q	01-29-15

* Certification renewal pending - certification considered valid.

Method Summary

Client: SLR International Corp
Project/Site: Pogo Mine

TestAmerica Job ID: 320-9897-1

Method	Method Description	Protocol	Laboratory
0050/26A	HCl	EPA	TAL SAC
0050/26A	Hydrogen Halide and Halogen Emissions/Stationary Sources (Mod)	SW846	TAL SAC
29/6020	Metals (ICPMS), Stationary Source	EPA	TAL SAC
29/7470A	Mercury - Permanganate	EPA	TAL SAC
29/7470A	Mercury - Nitric/Peroxide	EPA	TAL SAC
29/7470A	Mercury - Empty	EPA	TAL SAC
29/7470A	Mercury - Front Half	EPA	TAL SAC
29/7470A	Mercury - HCl	EPA	TAL SAC

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SAC = TestAmerica Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: SLR International Corp
Project/Site: Pogo Mine

TestAmerica Job ID: 320-9897-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
320-9897-1	I29-1	Air	10/07/14 00:00	10/13/14 08:50
320-9897-2	I29-2	Air	10/08/14 00:00	10/13/14 08:50
320-9897-3	I29-3	Air	10/08/14 00:00	10/13/14 08:50
320-9897-4	I29-BLANK	Air	10/08/14 00:00	10/13/14 08:50
320-9897-5	PEA1945	Air	10/08/14 00:00	10/13/14 08:50
320-9897-6	PEA1948	Air	10/08/14 00:00	10/13/14 08:50
320-9897-7	PEA1941	Air	10/08/14 00:00	10/13/14 08:50
320-9897-8	I5-1	Air	10/07/14 00:00	10/13/14 08:50
320-9897-9	I5-2	Air	10/08/14 00:00	10/13/14 08:50
320-9897-10	I5-3	Air	10/08/14 00:00	10/13/14 08:50
320-9897-11	I5-4	Air	10/09/14 00:00	10/13/14 08:50
320-9897-12	I5 BLANK	Air	10/09/14 00:00	10/13/14 08:50

Detection Limit Exceptions Summary

Client: SLR International Corp
Project/Site: Pogo Mine

TestAmerica Job ID: 320-9897-1

The requested project specific reporting limits listed below were less than laboratory standard quantitation limits (PQL) but greater than or equal to the laboratory method detection limits (MDL). It must be noted that results reported below lab standard quantitation limits may result in false positive/false negative values and less accurate quantitation. Routine laboratory procedures do not indicate corrective action for detections below the laboratory's PQL.

Method	Matrix	Analyte	Units	Client RL	Lab PQL
0050/26A	Air	Hydrochloric Acid	mg/sample	0.51	0.514

Shipping and Receiving Documents

Chain of Custody Record

No. 118.00284.00002

SLR International Corporation
1612 Specchi Point Road, Suite 118, Fort Collins, CO 80525
(970) 494-0105 Phone • (970) 399-3693 Fax
<http://www.slrconsulting.com/lis>



Project Name:	Pogo Mine	Project Number:	118.00284.00002	Analysis Required			Page <u>1</u> of <u>4</u>					
Send Report To:	John Rosburg	Sampler (Print Name):	John Rosburg									
Address:	20325 Moss Bend Ct	Sampler (Print Name):	Doug Bopray									
Lutz, FL 33558	Shipment Method:	FED EX										
Phone:	(970) 420-0502	Airbill Number										
Fax:	(813) 949-7333	Laboratory Receiving:	TestAmerica Sacramento									
Field Sample ID	Sample Date	Sample Time	Sample Matrix	Number of Containers	Cadmium	Lead	Lab Sample ID (to be completed by lab)					
I29-1, Container 1	10/07/14		Filter	1	X	X						
I29-1, Container 3	10/07/14		0.1 N HNO3	1	X	X						
I29-1, Container 4	10/07/14		H2O2/HNO3	2	X	X						
I29-1, Container 5A	10/07/14		0.1 N HNO3	1	X							
I29-1, Container 5B	10/07/14		Acidified KMnO4	1	X		320-9897 Chain of Custody					
I29-2, Container 1	10/08/14		Filter	1	X	X						
I29-2, Container 3	10/08/14		0.1 N HNO3	1	X	X						
I29-2, Container 4	10/08/14		H2O2/HNO3	2	X	X						
I29-2, Container 5A	10/08/14		0.1 N HNO3	1	X							
I29-2, Container 5B	10/08/14		Acidified KMnO4	1	X							
I29-3, Container 1	10/08/14		Filter	1	X	X						
I29-3, Container 3	10/08/14		0.1 N HNO3	1	X	X						
I29-3, Container 4	10/08/14		H2O2/HNO3	2	X	X						
I29-3, Container 5A	10/08/14		0.1 N HNO3	1	X							
I29-3, Container 5B	10/08/14		Acidified KMnO4	1	X							
Relinquished by: (Signature)			Date: 10/10/14	Time: 10:45:27	Received by: (Signature)	Date: 10/13/14	Time: 0850	QA/QC Level: I			Turnaround:	Sample Receipt:
Relinquished by: (Signature)			Date:	Time:	Received by: (Signature)	Date:	Time:	I-level	I	<input type="checkbox"/>	Routine	Total # Containers Received?
Relinquished by: (Signature)			Date:	Time:	Received by: (Signature)	Date:	Time:	II-level	II	<input type="checkbox"/>	24 Hour	QC Seeds Present?
								III-level	III	<input type="checkbox"/>	1 Week	QC Seeds Intact?
								Other		<input type="checkbox"/>	Other	Received Containers Infect?
											Temperature?	
Yellow: PNL Cap Pink: Field Copy												Gold: PNL/QA/QC Copy
While, Lab Copy												

Chain of Custody Record

No. 118.00284.00002

SLR International Corporation
1812 Specht Point Road, Suite 119, Fort Collins, CO 80525
(970) 494-0605 Phone • (970) 593-3996 Fax

Chain of Custody Record

No. 118,00284.00002

SLR International Corporation
1612 Spechi Point Road, Suite 119, Fort Collins, CO 80525
(970) 494-0805 Phone • (970) 999-3998 Fax

Project Name:	Pogo Mine	Project Number:	118-00284-00002	Analysis Required			Page <u>3</u> of <u>4</u>
Send Report To:	John Rosburg	Sampler (Print Name):	John Rosburg				
Address:	20325 Moss Bend Ct	Sampler (Print Name):	Doug Bopray				
Lutz, FL 33558	Shipment Method:	FED EX					
Phone:	970-420-0602	Airbill Number					
Fax:	(813) 948-7333	Laboratory Receiving:	TestAmerica Sacramento				
Field Sample ID	Sample Date	Sample Time	Sample Matrix	Number of Containers	Comments, Special Instructions, etc.	Lab Sample ID (to be completed by lab)	
15-1	10/07/14		0.1 N H ₂ SO ₄	2	X		
15-2	10/08/14		0.1 N H ₂ SO ₄	2	X		
15-3	10/08/14		0.1 N H ₂ SO ₄	2	X		
15-4	10/09/14		0.1 N H ₂ SO ₄	2	X		
15-Blank	10/09/14		0.1 N H ₂ SO ₄	1	X		
Reinquished by: (Signature) <u>J. Rosburg</u> Received by: (Signature) <u>J. Rosburg</u>						Date: <u>10/13/14</u> Time: <u>8:50</u>	QA/QC Level Turnaround Sample Custodian Remarks (Completed By Laboratory):
Reinquished by: (Signature) <u>J. Rosburg</u>	Date: <u>10/13/14</u>	Time: <u>8:50</u>	Received by: (Signature) <u>J. Rosburg</u>	Date: <u>10/13/14</u>	Time: <u>8:50</u>	QA/QC Level Turnaround Sample Receipt	Total # Containers Received? <input type="checkbox"/>
Reinquished by: (Signature) <u>J. Rosburg</u>	Date: <u>10/13/14</u>	Time: <u>8:50</u>	Received by: (Signature) <u>J. Rosburg</u>	Date: <u>10/13/14</u>	Time: <u>8:50</u>	QA/QC Level Turnaround Sample Receipt	COC Seals Present? <input type="checkbox"/>
Reinquished by: (Signature) <u>J. Rosburg</u>	Date: <u>10/13/14</u>	Time: <u>8:50</u>	Received by: (Signature) <u>J. Rosburg</u>	Date: <u>10/13/14</u>	Time: <u>8:50</u>	QA/QC Level Turnaround Sample Receipt	COC Seals Intact? <input type="checkbox"/>
Reinquished by: (Signature) <u>J. Rosburg</u>	Date: <u>10/13/14</u>	Time: <u>8:50</u>	Received by: (Signature) <u>J. Rosburg</u>	Date: <u>10/13/14</u>	Time: <u>8:50</u>	QA/QC Level Turnaround Sample Receipt	Received Containers Blank? <input type="checkbox"/>
Reinquished by: (Signature) <u>J. Rosburg</u>	Date: <u>10/13/14</u>	Time: <u>8:50</u>	Received by: (Signature) <u>J. Rosburg</u>	Date: <u>10/13/14</u>	Time: <u>8:50</u>	QA/QC Level Turnaround Sample Receipt	Temperature? <input type="checkbox"/>
Reinquished by: (Signature) <u>J. Rosburg</u>	Date: <u>10/13/14</u>	Time: <u>8:50</u>	Received by: (Signature) <u>J. Rosburg</u>	Date: <u>10/13/14</u>	Time: <u>8:50</u>	QA/QC Level Turnaround Sample Receipt	Routine <input type="checkbox"/>
Reinquished by: (Signature) <u>J. Rosburg</u>	Date: <u>10/13/14</u>	Time: <u>8:50</u>	Received by: (Signature) <u>J. Rosburg</u>	Date: <u>10/13/14</u>	Time: <u>8:50</u>	QA/QC Level Turnaround Sample Receipt	24 Hour <input type="checkbox"/>
Reinquished by: (Signature) <u>J. Rosburg</u>	Date: <u>10/13/14</u>	Time: <u>8:50</u>	Received by: (Signature) <u>J. Rosburg</u>	Date: <u>10/13/14</u>	Time: <u>8:50</u>	QA/QC Level Turnaround Sample Receipt	1 Week <input type="checkbox"/>
Reinquished by: (Signature) <u>J. Rosburg</u>	Date: <u>10/13/14</u>	Time: <u>8:50</u>	Received by: (Signature) <u>J. Rosburg</u>	Date: <u>10/13/14</u>	Time: <u>8:50</u>	QA/QC Level Turnaround Sample Receipt	Other <input type="checkbox"/>

Galt: PM/DOC Copy

Yellow GM Com Purch. Effec'l Con

Chain of Custody Record

No. 118.00284.00002

SLR International Corporation

1612 Specie Point Road, Suite 119, Fort Collins, CO 80525
(970) 494-4805 Phone • (970) 999-3598 Fax

<http://www.slrconsulting.com/us>

Project Name:	Project Number:	Analysis Required										Page <u>4</u> of <u>4</u>					
Pogo Mine	118.00284.00002	Sampler (Print Name):	John Rosburg	Shipment Method:	FED EX	Laboratory Receiving:	TestAmerica Sacramento										
Send Report To:	John Rosburg	Sampler (Print Name):	Doug Bopray	Phone:	(970) 420-0602	Address:	20325 Moss Bend Ct	Field Sample ID:	Sample Date	Sample Time	Sample Matrix	Number of Containers	Comments, Special Instructions, etc.	Lab Sample ID (to be completed by lab)			
Address:	Lutz, FL 33558	Shipment Method:	Airbill Number	Fax:	(813) 948-7333												
Please combine front and back half for Method 29 Analysis.																	
Cadmium (Cd), Lead (Pb) and Mercury Analysis on samples 129-1, 129-2, 129-3 and 129-blank																	
Please provide digital results to John Rosburg at rosburg@slrconsulting.com																	
If you have any questions or concerns regarding the samples or instructions please call John Rosburg at (970) 420-0602 or Doug Bopray at (970) 219-1431.																	
Relinquished by: (Signature)	Date: <u>10/31/14</u>	Time: <u>11:00 AM</u>	Received by: (Signature)	Date: <u>10/31/14</u>	Time: <u>8:50 AM</u>	QA/QC Level	Sample Custodian Remarks (Completed By Laboratory):	Turnaround							Sample Receipt		
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:	Level	I	<input type="checkbox"/> Routine	<input type="checkbox"/>	Total # Containers Received?							
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:	Level	II	<input type="checkbox"/> 24 Hour	<input type="checkbox"/>	QC Seals Present?							
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:	Level	III	<input type="checkbox"/> 1 Week	<input type="checkbox"/>	QC Seals Intact?							
White Lab Copy	Yellow: PM Cop Pink; Field Copy				Gold: PM/QA/QC Copy				Received Containers Intact?			Other	Temperature?				

Login Sample Receipt Checklist

Client: SLR International Corp

Job Number: 320-9897-1

Login Number: 9897

List Source: TestAmerica Sacramento

List Number: 1

Creator: Hytrek, Cheryl

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	Thermal preservation not required.
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	False	Refer to Job Narrative for details.
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

STATIONARY SOURCE AUDIT REPORT

Project ID:
Final Report

Event SSAS14-3-90

August 12, 2014

Participating Facility:

Sumitomo Metal Mining Co., Ltd

Pogo Mine c/o Lynden Transport
3001 Peger Road
Fairbanks, AK 99709 US
Phone: 907-895-2879

Thank you for participating in event SSAS14-3-90, July 22, 2014 to August 11, 2014. If you have any questions or comments about this study please contact me:



2931 Soldier Springs Rd.
Laramie, WY 82070 USA
1-307-742-5452
www.rt-corp.com

This report shall not be reproduced except in full, without written approval of the laboratory. The data and results reported in this document are the property of the participating laboratory and are confidential. If you wish to appeal an evaluation listed in this report please contact our QA Supervisor at 1(307) 742-5452 or RTCPGroup@sial.com

Sincerely,

A handwritten signature in black ink, appearing to read "Jennifer Duhon".

Jennifer Duhon
Proficiency Testing Coordinator

STATIONARY SOURCE AUDIT REPORT

Dataset

Dataset 1

Stack Tester:**SLR International Corporation**

1612 Specht Point Road

Suite 119

Fort Collins, CO 80525 US

Contact: **Doug Bopray**

Phone: 970-999-3980

Tester ID: **T0210****Testing Laboratory:****Test America**

880 Riverside Parkway

West Sacramento, CA 95605 US

Contact: Lisa Stafford - QA Scientist

Phone: (916) 374-4308

Tester ID: **L0048**

Method: EPA Method 29 (CVAA) (2000)

Method Number 10403302

	Result Units	Assigned Value	Accept. Window	Evaluation
Mercury, Hg ^{1, 4} 1095 / PEA1947-1EA - Lot SSAS9014454 /Analysis Date: 8/5/14	5.90 ug/filter <i>Evaluation Criteria - 8</i>	6.10	4.57 to 7.63 <i>Evaluation Parameter - a:1, b:0, c:0.125, d:0</i>	Acceptable
Mercury, Hg ^{1, 4} 1095 / PEA1950-1EA - Lot SSAS9014454 /Analysis Date: 7/28/14	15.5 ng/ml <i>Evaluation Criteria - 8</i>	15.0	11.3 to 18.8 <i>Evaluation Parameter - a:1, b:0, c:0.125, d:0</i>	Acceptable

RTC is accredited to perform PT programs for the scope of accreditation to ISO/IEC 17043 under ACCLASS certificate AP-1469.



End of Dataset 1

STATIONARY SOURCE AUDIT REPORT

Definitions and Interpretation of Statistical Analysis:

Assigned Value: Value attributed to a particular quantity and accepted, sometimes by convention, as having an uncertainty appropriate for a given purpose. See ISO/IEC 17043 for additional information. In general the assigned value is the value used to assess proficiency and may or may not be the made to value (gravimetric value).

Accept. Window: The range of values that constitute acceptable performance for a laboratory participating in this PT study.

Evaluation Criteria:

1 - Regression Equation - Acceptance windows based on TNI adopted equation of proficiency value +/- 3 proficiency standard deviations and check limits of proficiency value +/- 2 proficiency standard deviations. Proficiency value and proficiency standard deviation are calculated from gravimetric variables a, b, c, & d as proficiency value = a * gravimetric + b and proficiency standard deviation = c * gravimetric + d.

2 - Study Robust Mean and c,d regression - Acceptance windows based on TNI adopted equation of proficiency value +/- 3 proficiency standard deviations and check limits of proficiency value +/- 2 proficiency standard deviations. Proficiency value and proficiency standard deviation calculated from robust study mean and variables c & d as proficiency value = robust mean and proficiency standard deviation = c * proficiency value + d.

3 - Fixed Limits - Acceptance windows based on span of gravimetric percentage from gravimetric as gravimetric +/- gravimetric * percentage.

4 - Adjustable Fixed Limits - Acceptance windows base on a span of gravimetric percentage from gravimetric as gravimetric +/- gravimetric * lowPercentage where gravimetric < break and gravimetric +/- gravimetric * highPercentage where gravimetric >= break.

5 - Study Statistics - Acceptance windows based on a number of standard deviations span from the study mean as study mean +/- (deviations * standard deviation).

6 - Log Transform Statistics - Acceptance windows based on lognormal distributed data. Acceptance windows = mean(lognormal) +/- span * standard deviation(lognormal).

7 - Reserved

8 - Regression Equation 2SD - Acceptance windows based on EPA equation of proficiency value +/- 2 proficiency standard deviations. Proficiency value and proficiency standard deviation are calculated from gravimetric variables a, b, c, & d as proficiency value = a * gravimetric + b and proficiency standard deviation = c * gravimetric + d. Generally reserved for drinking water studies.

Proficiency Test Item Preparation, Homogeneity and Stability Assessment - RTC uses proprietary and published methods for the manufacture, homogeneity and stability testing of proficiency test items. RTC's proficiency test materials meet requirements of ISO Guide 34. For more information contact RTC. Additionally RTC complies with TNI Volume 3 'General Requirements for Environmental Proficiency Test Providers', EL-V3-2009, 2009 for all TNI Fields of Proficiency Testing analytes.

Metrological Traceability - All preparations are made using balances calibrated annually traceable to NIST standards. Where appropriate analytical measurements are traceable through an unbroken chain to NIST standards, or a Certified Reference Material manufactured under ISO Guide 34 in conjunction with ISO/IEC 17025.

Statistical Analysis - RTC uses robust statistics to calculate study means and standard deviations - Reference - Kafadar, K, A Biweight Approach to the One-Sample Problem, Journal of the American Statistical Association, Vol. 77, No. 378, June, 1982, pp. 416-424.

Additional Information - Go to www.rt-corp.com/reporting for additional information on summary statistics for specific methods, advice on the interpretation of the statistical analysis, and additional comments/recommendations. If you failed an analyte it may be required to perform a corrective action and/or retest. RTC recommends that you contact your accreditation body for specific instruction.

STATIONARY SOURCE AUDIT REPORT

Project ID:
Final Report

- 1 NELAC Compliant, covered by RTC's ACLASS Proficiency Testing Provider accreditation, Cert. AP-1469
- 4 ISO 17043 Accredited, covered by RTC's ACLASS Proficiency Testing Provider accreditation, Cert AP-1469



Authorizing Officer:
Patrick Brumfield, ASQ CQA
QA Manager

Date: 8/12/2014

STATIONARY SOURCE AUDIT REPORT

Project ID:
Final Report

STATIONARY SOURCE AUDIT REPORT

Event SSAS14-3-95

November 17, 2014

Participating Facility:

Sumitomo Metal Mining Co., Ltd

Pogo Mine c/o Lynden Transport
3001 Peger Road
Fairbanks, AK 99709 US
Phone: 907-895-2879

Thank you for participating in event SSAS14-3-95, July 22, 2014 to November 14, 2014. If you have any questions or comments about this study please contact me:



2931 Soldier Springs Rd.
Laramie, WY 82070 USA
1-307-742-5452
www.rt-corp.com

This report shall not be reproduced except in full, without written approval of the laboratory. The data and results reported in this document are the property of the participating laboratory and are confidential. If you wish to appeal an evaluation listed in this report please contact our QA Supervisor at 1(307) 742-5452 or RTCPGroup@sial.com

Sincerely,

A handwritten signature in black ink, appearing to read "Jennifer Duhon".

Jennifer Duhon
Proficiency Testing Coordinator

STATIONARY SOURCE AUDIT REPORT

Project ID:
Final Report

Dataset

Dataset 1

Stack Tester:

SLR International Corporation

1612 Specht Point Road

Suite 119

Fort Collins, CO 80525 US

Contact: Doug Bopray

Phone: 970-999-3980

Tester ID: T0210

Testing Laboratory:

Test America

880 Riverside Parkway

West Sacramento, CA 95605 US

Contact: Lisa Stafford - QA Scientist

Phone: (916) 374-4308

Tester ID: L0048

Method: EPA Method 26A (2000)

Method Number 10403200

	Result Units	Assigned Value	Accept. Window	Evaluation
Hydrogen chloride ^{1, 4} 1770 / PEA1941-20ML - Lot SSAS9514455 /Analysis Date: 10/27/14	117 mg/L <i>Evaluation Criteria - 8</i>	112	101 to 123 <i>Evaluation Parameter - a:1, b:0, c:0.05, d:0</i>	Acceptable

RTC is accredited to perform PT programs for the scope of accreditation to ISO/IEC 17043 under ACCLASS certificate AP-1469.



Method: EPA Method 29 (ICP-MS) (2000)

Method Number 10403700

	Result Units	Assigned Value	Accept. Window	Evaluation
Cadmium, Cd ^{1, 4} 1030 / PEA1945-1EA - Lot SSAS9514455 /Analysis Date: 10/24/14	76.8 ug/filter <i>Evaluation Criteria - 8</i>	83.1	66.5 to 99.7 <i>Evaluation Parameter - a:1, b:0, c:0.10, d:0</i>	Acceptable
Cadmium, Cd ^{1, 4} 1030 / PEA1948-1EA - Lot SSAS9514455 /Analysis Date: 10/24/14	0.538 ug/ml <i>Evaluation Criteria - 8</i>	0.543	0.434 to 0.652 <i>Evaluation Parameter - a:1, b:0, c:0.10, d:0</i>	Acceptable
Lead, Pb ^{1, 4} 1075 / PEA1945-1EA - Lot SSAS9514455	99.9 ug/filter <i>Evaluation Criteria - 8</i>	99.5	79.6 to 119 <i>Evaluation Parameter - a:1, b:0, c:0.10, d:0</i>	Acceptable
Lead, Pb ^{1, 4} 1075 / PEA1948-1EA - Lot SSAS9514455 /Analysis Date: 10/24/14	1.188 ug/ml <i>Evaluation Criteria - 8</i>	1.14	0.855 to 1.42 <i>Evaluation Parameter - a:1, b:0, c:0.125, d:0</i>	Acceptable

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STATIONARY SOURCE AUDIT REPORT

Project ID:
Final Report

End of Dataset 1

STATIONARY SOURCE AUDIT REPORT

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6 - Log Transform Statistics - Acceptance windows based on lognormal distributed data. Acceptance windows = mean(lognormal) +/- span * standard deviation(lognormal).

7 - Reserved

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STATIONARY SOURCE AUDIT REPORT

Project ID:
Final Report

- 1 NELAC Compliant, covered by RTC's ACLASS Proficiency Testing Provider accreditation, Cert. AP-1469
- 4 ISO 17043 Accredited, covered by RTC's ACLASS Proficiency Testing Provider accreditation, Cert AP-1469



Authorizing Officer:
Patrick Brumfield, ASQ CQA
QA Manager

Date: 11/17/2014

STATIONARY SOURCE AUDIT REPORT

Project ID:
Final Report

APPENDIX C

CALIBRATION DATA

Unit 412 CISWI Test Report

Sumitomo Metal Mining Pogo LLC
3204 International Street
Fairbanks, Alaska 99701

December 2014

Alternative RM-5 Post Test Calibration
SMM - Pogo Mine
Particulate and Hydrogen Chloride Sample Runs
Incinerator
10/07/14

RUN #	METER BOX	RUN TIME (min)	dH@	M _d	P _b	T _{dm}	V _{dm}	dH _{avg}	(SQRT dH) _{avg}	Y _{qa}
				(in. Hg)	(°F)	(°R)	(acf)	(in. H ₂ O)	SQRT (in. H ₂ O)	
15-1	Hawkeye	63	1.8975	29.30	28.75	87.0	547.0	54.696	2.46	1.57
15-2	Hawkeye	58	1.8975	29.25	28.75	94.9	554.9	49.945	2.38	1.54
15-3	Hawkeye	64	1.8975	29.27	28.60	101.5	561.5	55.810	2.40	1.55
15-4	Hawkeye	68	1.8975	29.27	28.30	94.9	554.9	59.435	2.42	1.56
Average									Average	1.0129

Average Y _{dq}	Meter Y _d	% Difference
1.0129	1.0081	0.47%

The difference between the average Y_{qa} for the three runs and the meter box Y_d must be within five percent to pass the calibration

Reference: Roger T. Shigehara, P.G. Royals, and E.W. Steward,
 "Alternative Method 5 Post-Test Calibration", Entropy Inc.

Alternative RM-5 Post Test Calibration
SMM - Pogo Mine
Metals Sample Runs
Incinerator
10/07/14

RUN #	METER BOX	RUN TIME (min)	dH@	M _d	P _b	T _{dm}	T _{dm}	V _{dm}	dH _{avg}	(SQRT dH) _{avg}	Y _{qa}
				(in. Hg)	(°F)	(°R)	(acf)	(in. H ₂ O)	SQRT (in. H ₂ O)		
I29-1	Hawkeye	129	1.8975	29.27	28.75	95.7	555.7	111.773	2.41	1.55	1.0125
I29-2	Hawkeye	120	1.8975	29.30	28.60	92.8	552.8	105.202	2.46	1.57	1.0115
I29-3	Hawkeye	120	1.8975	29.30	28.60	99.6	559.6	101.486	2.41	1.55	1.0433
							Average	1.0224		Average	1.0224

Average Y _{dm}	Meter Y _d	% Difference
1.0224	1.0081	1.42%

The difference between the average Y_{qa} for the three runs and the meter box Y_d must be within five percent to pass the calibration

Reference: Roger T. Shigehara, P.G. Royals, and E.W. Steward,
 "Alternative Method 5 Post-Test Calibration", Entropy Inc.

Alternative RM-5 Post Test Calibration
SMMI - Pogo Mine
Dioxin and Furans Sample Runs
Incinerator
10/07/14

RUN #	METER BOX	RUN TIME (min)	dH@	M _d	P _b	T _{dm}	V _{dm}	dH _{avg}	(SQRT dH) _{avg}	Y _{qa}
				(in. Hg)	(°F)	(°R)	(acf)	(in. H ₂ O)	SQRT (in. H ₂ O)	
I23-1	Hawkeye	117	1.8975	29.24	28.75	93.2	553.2	104.240	2.56	1.59
I23-2	Hawkeye	128	1.8975	29.31	28.60	95.6	555.6	112.894	2.44	1.56
I23-3	Hawkeye	130	1.8975	29.31	28.30	88.7	548.7	115.981	2.57	1.60
								Average	1.0084	

Average Y _{dm}	Meter Y _d	% Difference
1.0084	1.0081	0.03%

The difference between the average Y_{qa} for the three runs and the meter box Y_d must be within five percent to pass the calibration

Reference: Roger T. Shigehara, P.G. Royals, and E.W. Steward,
 "Alternative Method 5 Post-Test Calibration", Entropy Inc.

Clean Air Engineering - Meter Box Full Test Calibration

Client: SLR Reviewed By: J.Ivens Calibration Signature: [Signature]
 ID No: xx Hawkeye Calibrated By: O.Lavrov
 Dept No: n/a Date of Calibration: 04/15/14 Meter Box $\Delta H@:$ 1.8975
 Meter Box Serial No: 0028-041514-1 Due Date of Calibration: 04/15/15 Barometer Serial No: W12637
 Manufacturer Part No: 0028 Meter Box Vacuum: 1.0 in. H₂O Barometric Pressure: 29.34 in. Hg

	Standard Meter Gas Volume (ft ³)			Meter Box Gas Volume (ft ³)			Std. Meter Temperature (°F)			Meter Box Temperature (°F)			Time (min.)			Calibration Results		
Q	ΔH	ΔP	Y_{ds}	Initial	Final	V_{ds}	T _{is}	T _{os}	T _{ds}	T _i	T _o	T _d	Avg.	In	Out	Θ	Y_d	$\Delta H@$
0.367	0.50	-1.10	1.0000	0.0000	5.0000	44.638	49.693	5.055	69.5	69.5	69.50	85.0	80.0	82.50	13.33	1.0093	2.0061	
0.369	0.50	-1.10	1.0000	0.0000	5.0000	49.693	54.736	5.043	69.5	69.5	69.50	85.0	80.0	82.50	13.25	1.0117	1.9821	
0.667	1.50	-1.40	1.0000	0.0000	10.0000	59.951	70.097	10.146	70.0	70.0	70.00	92.0	81.0	86.50	14.63	1.0089	1.8724	
0.668	1.50	-1.40	1.0000	0.0000	10.0000	70.097	80.258	10.161	70.0	70.0	70.00	92.0	82.0	87.00	14.62	1.0084	1.8666	
0.922	3.00	-1.70	1.0000	0.0000	10.0000	88.188	98.377	10.189	70.0	70.0	70.00	96.0	83.0	89.50	10.59	1.0057	1.8892	
0.923	3.00	-1.70	1.0000	0.0000	10.0000	98.377	108.586	10.209	70.0	70.0	70.00	96.0	84.0	90.00	10.58	1.0046	1.8853	
Averages															1.00811	1.89749		

Nomenclature

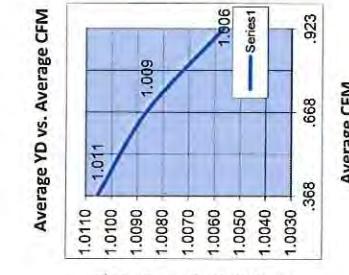
Equations

$$Y_d = (Y_{ds}) \left[\frac{V_{ds}}{V_d} \right] \left[\frac{T_d + 460}{T_{ds} + 460} \right] \left[\frac{P_b + \Delta P / 13.6}{P_b + \Delta H / 13.6} \right]$$

$$\Delta H @ = \frac{(0.0319)(\Delta H)}{P_b(T_o + 460)} \left[\frac{(T_{ds} + 460)\Theta}{(V_{ds})(X_{ds})} \right]^2$$

$$Q = \frac{17.64(V_{ds})(P_b)}{(T_{ds} + 460)(X_{ds})}$$

P_b Barometric Pressure (in. Hg)
 Q Flow Rate (cfm)
 ΔH Orifice Pressure Differential (in. H₂O)
 ΔP Inlet Pressure Differential (in. H₂O)
 V_d Gas Meter Volume - Dry (ft³)
 V_{ds} Standard Meter Volume - Dry (ft³)
 T_d Average Standard Meter Temperature (°F)
 T_o Outlet Meter Box Temperature (°F)
 T_{ds} Average Standard Meter Temperature (°F)
 Y_d Meter Correction Factor (unitless), $Y_d \leq Y_{avg} \leq 0.02$
 $\Delta H@$ Orifice Pressure Differential giving 0.75 cfm
 of air at 68°F and 29.92 in. Hg (in. H₂O)
 $\Delta H@ \leq \Delta H@_{avg} \pm 0.2$
 Θ Duration of Run (minutes)



Average CFM

Calibration Reference Information (Standard Meter)

Reference Used: Wet Test Meter
 Calibrated By: Martin Vaguero
 Percent Error: 0.114%

Meter Box Pre-Calibration Inspection

Positive Leak Check:	Pass	Electrical Check:	Pass
Negative Leak Check:	Pass	Pyrometer Check:	Pass
Vacuum Gauge Check:	Pass	YD Tolerance:	Pass

YD Tolerance: ± 2% of 1.0000

Meter Box - Pyrometer Calibration Sheet

Meter Box No: 0028-041514-1

Office: Clean Air 80

Calibrated by: O.Lavrov

Client: SLR

Date: 4/15/14

Job No: N/A

Temperature Scale Used: Fahrenheit

Type of Calibration: Full-Test

Calibration Reference Settings (°F)	Pyrometer Reading for each Channel (°F)						
	1 Stack	2 Probe	3 Filter	4 Imp Out	5 Aux		
50	51	52	52	51	51		
100	101	102	102	101	101		
150	151	151	152	151	151		
200	201	202	202	201	201		
250	251	252	252	251	251		
300	301	302	302	301	301		
350	351	352	352	351	351		
400	401	402	401	401	401		
450	451	452	451	451	451		
500	501	502	501	501	501		
550	551	552	551	551	551		
600	601	602	601	601	601		

Tolerance = ±2°F difference from reference setting.

Calibration Reference Information

Reference Used: Omega CL23A

Serial No: T-279500

Calibrated By: JH Metrology

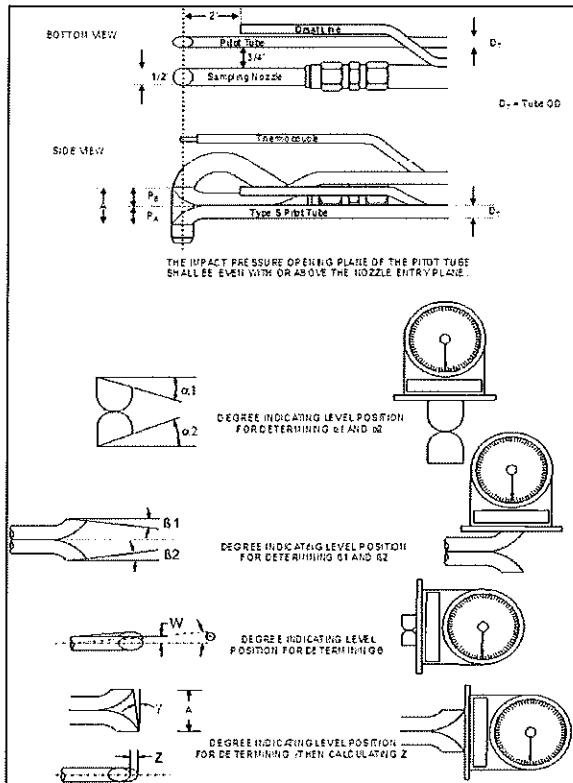
Date Calibrated: 9/6/2013

Calibration Report No: 1000171295

Calibration Due Date: 9/7/2014



Type S Pitot Tube Inspection Form



PITOT TUBE/PROBE # 5155 SLR ID 314

Parameter	Value	Allowable Range	Check
Assembly Level?	yes	Yes	OK
Ports Damaged?	no	No	OK
α_1	0	$-10^\circ < \alpha_1 < +10^\circ$	OK
α_2	1	$-10^\circ < \alpha_2 < +10^\circ$	OK
β_1	0	$-5^\circ < \beta_1 < +5^\circ$	OK
β_2	0	$-5^\circ < \beta_2 < +5^\circ$	OK
γ	0		
θ	0		
$Z = A \tan \gamma$	0.000	$Z \leq .125"$	OK
$W = A \tan \theta$	0.000	$W \leq .031"$	OK
D_t	0.375	.188" to .375"	OK
$A/2D_t$	1.244	$1.05 \leq P_A/D_t \leq 1.5$	OK
A	0.933	$2.1D_t \leq A \leq 3D_t$	OK

Certification

I certify that pitot tube/probe number 5155 meets or exceeds all specifications, criteria and/or applicable design features and is hereby assigned a pitot tube certification factor of 0.84.
See 40 CFR Pt. 60, App. A, EPA Method 2.

Certified by:

Personnel (Signature/Date)



THERMOCOUPLE CALIBRATION FORM

Thermocouple ID Blue
Date 5/5/2014
Standard ID VWR S/N 140095591
Barometric Pressure (in Hg) 24.9
Ambient Temp.(°F) 68
Calibrator D. Bopray

Temperature Reference Point	Source	Reference Temperature (R)	Thermocouple Potentiometer Temperature (R)	Temperature Difference (%)
(32°F)	Ice Water	491	493	-0.41
(75°F)	Ambient	527	528	-0.19
(212°F)	Boiling Water	670	672	-0.30

$$R = ^\circ F + 460$$

Temperature Difference (%) $\leq 1.5\%$

Temperature Difference (%) = (Reference Temp.-Thermocouple temp.)/Reference temp.



THERMOCOUPLE CALIBRATION FORM

Thermocouple ID Green
Date 5/5/2014
Barometric Pressure (in Hg) 24.9
Calibrator D. Bopray

Standard ID VWR S/N 140095591
Ambient Temp.(°F) 68

Temperature Reference Point	Source	Reference Temperature (R)	Thermocouple Potentiometer Temperature (R)	Temperature Difference (%)
(32°F)	Ice Water	493	494	-0.20
(75°F)	Ambient	528	528	0.00
(212°F)	Boiling Water	669	670	-0.15

$$R = ^\circ F + 460$$

Temperature Difference (%) <= 1.5%

Temperature Difference (%) = (Reference Temp.-Thermocouple temp.)/Reference temp.



THERMOCOUPLE CALIBRATION FORM

Thermocouple ID Yellow
Date 5/5/2014
Standard ID VWR S/N 140095591
Barometric Pressure (in Hg) 24.9
Ambient Temp.(°F) 68
Calibrator D. Bopray

Temperature Reference Point	Source	Reference Temperature (R)	Thermocouple Potentiometer Temperature (R)	Temperature Difference (%)
(32°F)	Ice Water	494	493.8	0.04
(75°F)	Ambient	528	529	-0.19
(212°F)	Boiling Water	668	669	-0.15

$$R = ^\circ F + 460$$

Temperature Difference (%) $\leq 1.5\%$

Temperature Difference (%) = (Reference Temp.-Thermocouple temp.)/Reference temp.



THERMOCOUPLE CALIBRATION FORM

Thermocouple ID Red
Date 5/5/2014
Standard ID VWR S/N 140095591
Barometric Pressure (in Hg) 24.9
Ambient Temp.(°F) 68
Calibrator D. Bopray

Temperature Reference Point	Source	Reference Temperature (R)	Thermocouple Potentiometer Temperature (R)	Temperature Difference (%)
(32°F)	Ice Water	494	494.5	-0.10
(75°F)	Ambient	527	529	-0.38
(212°F)	Boiling Water	668	670	-0.30

$$R = ^\circ F + 460$$

Temperature Difference (%) <= 1.5%

Temperature Difference (%) = (Reference Temp.-Thermocouple temp.)/Reference temp.

Response Time Check



Plant:	SMMI- Pogo Mine	Date:	10/05/14
Location:	Delta Junction, AK	Check Time:	1615-1645
Source:	Incinerator	Operator:	J. Rosburg

Upscale Response Time

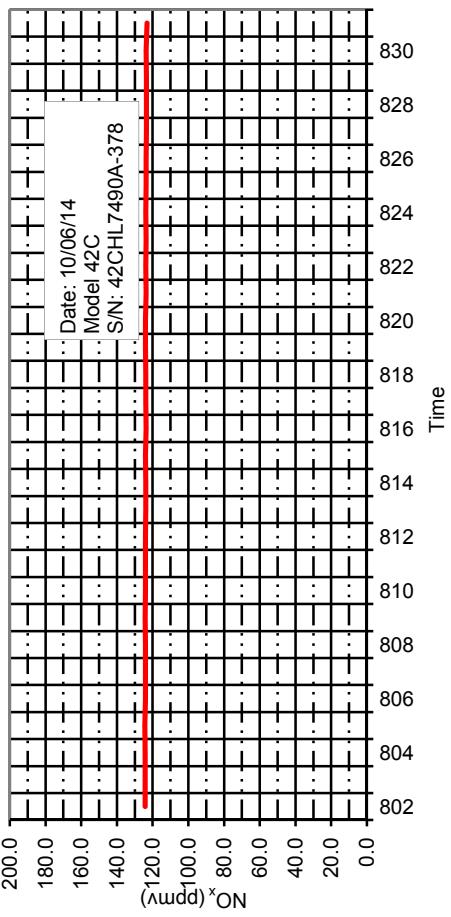
Parameter	Run 1 (seconds)	Run 2 (seconds)	Run 3 (seconds)	Average (seconds)
NO _x	54	55	52	54
SO ₂	64	72	70	69
CO	50	58	52	53
O ₂	36	40	42	39
CO ₂	38	44	46	43

Downscale Response Time

Parameter	Run 1 (seconds)	Run 2 (seconds)	Run 3 (seconds)	Average (seconds)
NO _x	80	84	84	83
SO ₂	62	64	66	64
CO	70	74	74	73
O ₂	32	34	34	33
CO ₂	30	34	35	33

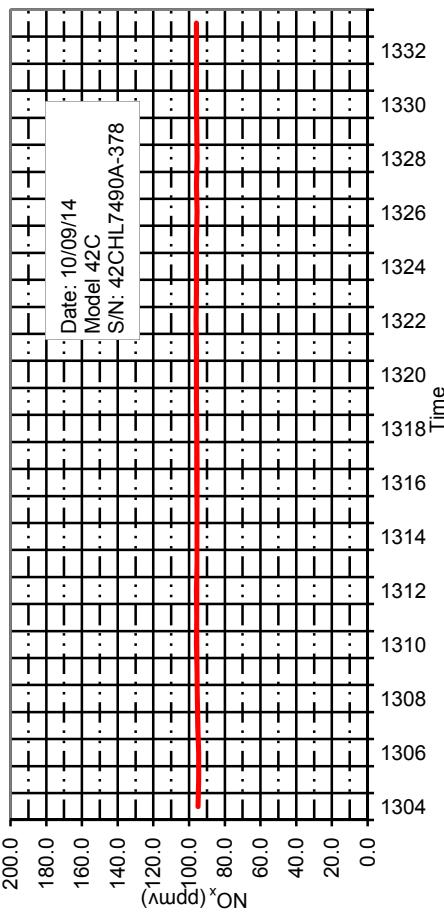
NO_x Converter Efficiency Check

Plant:	SMM - Pogo Mine	Date:	10/06/14
Source:	Incinerator	Model :	42CHL
Parameter:	NOx	S/N :	42CHL74490A-378
Date	Time	NO _x (ppm)	Pt No.
		(ppm)	(%)
10/06/14	802	124.2	0.1%
10/06/14	803	124.2	0.1%
10/06/14	804	124.2	0.1%
10/06/14	805	124.3	0.0%
10/06/14	806	124.1	0.2%
10/06/14	807	124.1	0.2%
10/06/14	808	124.1	0.2%
10/06/14	809	124.2	0.1%
10/06/14	810	124.0	0.2%
10/06/14	811	124.1	0.2%
10/06/14	812	124.0	0.2%
10/06/14	813	123.9	0.3%
10/06/14	814	123.9	0.3%
10/06/14	815	124.0	0.2%
10/06/14	816	123.7	0.5%
10/06/14	817	123.8	0.4%
10/06/14	818	123.8	0.4%
10/06/14	819	124.0	0.2%
10/06/14	820	124.0	0.2%
10/06/14	821	123.7	0.5%
10/06/14	822	123.8	0.4%
10/06/14	823	123.6	0.6%
10/06/14	824	123.8	0.4%
10/06/14	825	123.6	0.6%
10/06/14	826	123.7	0.5%
10/06/14	827	123.4	0.7%
10/06/14	828	123.4	0.7%
10/06/14	829	123.5	0.6%
10/06/14	830	123.6	0.6%
10/06/14	831	123.2	0.9%



NO_x Converter Efficiency Check

Plant:	SMM - Pogo Mine	Date:	10/09/14
Source:	Incinerator	Model :	42CHL
Parameter:	NOx	S/N :	42CHL74490A-378
Julian Day	Time	NO _x (ppmv)	Pt Deviation (%)
10/09/14	1304	94.9	1.1%
10/09/14	1305	94.7	1.4%
10/09/14	1306	94.6	1.5%
10/09/14	1307	95.1	0.9%
10/09/14	1308	95.4	0.6%
10/09/14	1309	95.5	0.5%
10/09/14	1310	95.8	0.2%
10/09/14	1311	95.7	0.3%
10/09/14	1312	95.9	0.1%
10/09/14	1313	95.6	0.4%
10/09/14	1314	95.5	0.5%
10/09/14	1315	95.5	0.5%
10/09/14	1316	95.7	0.3%
10/09/14	1317	95.7	0.3%
10/09/14	1318	95.7	0.3%
10/09/14	1319	95.9	0.1%
10/09/14	1320	95.9	0.1%
10/09/14	1321	95.9	0.1%
10/09/14	1322	96.0	0.0%
10/09/14	1323	95.9	0.1%
10/09/14	1324	95.9	0.1%
10/09/14	1325	95.8	0.2%
10/09/14	1326	95.6	0.4%
10/09/14	1327	95.8	0.2%
10/09/14	1328	95.6	0.4%
10/09/14	1329	95.7	0.3%
10/09/14	1330	95.8	0.2%
10/09/14	1331	95.9	0.1%
10/09/14	1332	95.9	0.1%
10/09/14	1333	95.9	0.1%



Peak Value 96.0 1.5%

Start of Run 1304 1332
End of Run 1333 1332

Analyzer Calibration

Client	SMM - Pogo	Cylinder #, Supplier, & Conc.	Analyzer	NOx	Model	TEI 42i
Location	Delta Junction, AK		Full Scale	181.0	Serial #	
Source ID	Incinerator		Analyzer	CO	Model	TEI 48i
Operator	J Rosburg		Full Scale	90.6	Serial #	
Date	10/07/14		Analyzer		Model	
Initial Cal Time	0725-0745		Full Scale		Serial #	
Final Cal Time	1836-1852		Analyzer	SO2	Model	AMETEK 921
			Full Scale	91.0	Serial #	
			Analyzer	O2	Model	Sevomex1440
			Full Scale	21.25	Serial #	
			Analyzer	CO2	Model	Sevomex1440
			Full Scale	20.74	Serial #	

Analyzer	Initial Analyzer Response	Cylinder Value (ppm/%)	Analyzer Response (ppm/%)	Absolute Difference (ppm/%)	Percent Difference	
					(% of span)	(Pass/Fail)
Analyzer NOx	Initial Analyzer Response	Zero	0.0	0.1	0.1	Pass
		Mid-Range	91.1	93.9	2.8	1.5 Pass
		High-Range	181.0	178.9	2.1	1.2 Pass
Analyzer Response		Zero	0.0	0.0	0.0	Pass
		Mid-Range	91.1	89.4	1.7	0.9 Pass
		High-Range	181.0	170.3	10.7	5.9 Fail
Analyzer CO	Initial Analyzer Response	Zero	0.0	0.0	0.0	Pass
		Mid-Range	50.1	50.2	0.1	0.1 Pass
		High-Range	90.6	90.8	0.2	0.2 Pass
Analyzer Response		Zero	0.0	0.2	0.2	Pass
		Mid-Range	50.1	49.3	0.8	0.9 Pass
		High-Range	90.6	92.3	1.7	1.9 Pass
Analyzer SO2	Initial Analyzer Response	Zero	0.0	0.1	0.1	Pass
		Mid-Range	49.3	49.9	0.6	0.7 Pass
		High-Range	91.0	92.2	1.2	1.3 Pass
Analyzer Response		Zero	0.0	-0.7	0.7	0.8 Pass
		Mid-Range	49.3	48.6	0.7	0.8 Pass
		High-Range	91.0	90.8	0.2	0.2 Pass
Analyzer Predicted	Initial Analyzer Response	Zero				
		Mid-Range				
		Mid-Range				
		High-Range				
Analyzer Response	Predicted	Zero				
		Mid-Range				
		Mid-Range				
		High-Range				
Analyzer O2	Initial Analyzer Response	Zero	0.00	0.02	0.0	0.1 Pass
		Mid-Range	9.98	10.00	0.0	0.1 Pass
		High-Range	21.25	21.19	0.1	0.3 Pass
Analyzer Response		Zero	0.00	0.03	0.0	0.1 Pass
		Mid-Range	9.98	9.93	0.1	0.2 Pass
		High-Range	21.25	21.11	0.1	0.7 Pass
Analyzer CO2	Initial Analyzer Response	Zero	0.00	0.10	0.1	0.5 Pass
		Mid-Range	9.85	10.05	0.2	1.0 Pass
		High-Range	20.74	20.65	0.1	0.4 Pass
Analyzer Response		Zero	0.00	0.10	0.1	0.5 Pass
		Mid-Range	9.85	10.01	0.2	0.8 Pass
		High-Range	20.74	20.60	0.1	0.7 Pass

Cal Error % =abs(CEM-Cylinder) / CS X 100

Allowable Calibration Error % = 2.0 for all analyzers except THC which is 5.0

Analyzer Bias

SMM - Pogo	SMM - Pogo	Analyzer: NOx	Span Value: 181
Location: Delta Junction, AK		Analyzer: CO	Span Value: 90.6
Source ID: Incinerator		Analyzer: SO2	Span Value: 91
Run Number: Run I5-1		Analyzer: O2	Span Value: 21.25
Date: 10/07/14		Analyzer: CO2	Span Value: 20.74
Run Time: 0905-1005			

Run No.	Monitor ID	Analyzer Response (ppm)	Initial Values			Final Values			Calibration Drift (%) (Pass/Fail)	
			Initial Time (military)	System Response (ppm)	Calibration Bias (%) (Pass/Fail)	Final Time (military)	System Response (ppm)	Calibration Bias (%) (Pass/Fail)		
Run 1 Zero	NOx	0.1	825	-0.1	-0.1 Pass	1014	0.0	-0.1 Pass	0.1	Pass
	NOx	93.9	828	92.0	-1.0 Pass	1018	90.5	-1.9 Pass	-0.8	Pass
Run 1 Span	CO	0.0	825	0.3	0.3 Pass	1014	0.2	0.2 Pass	-0.1	Pass
	CO	50.2	831	49.8	-0.4 Pass	1022	49.5	-0.8 Pass	-0.3	Pass
Run 1 Zero	SO2	0.1	825	-0.5	-0.7 Pass	1014	-0.6	-0.8 Pass	-0.1	Pass
	SO2	49.9	831	48.6	-1.4 Pass	1022	47.9	-2.2 Pass	-0.8	Pass
Run 1 Zero										
Run 1 Span	O2	0.02	828	0.07	0.2 Pass	1022	0.03	0.0 Pass	-0.2	Pass
	O2	10.00	825	10.00	0.0 Pass	1014	9.97	-0.1 Pass	-0.1	Pass
Run 1 Zero	CO2	0.10	828	0.03	-0.3 Pass	1022	0.10	0.0 Pass	0.3	Pass
	CO2	10.05	825	9.90	-0.7 Pass	1014	10.02	-0.1 Pass	0.6	Pass

System Cal Bias % = (System Cal Response - Analyzer Response) / CS X 100

% Allowable = 5.0

Calibration Drift = (Final System Response - Initial System Response) / CS X 100

% Allowable = 3.0

Analyzer Bias

SMM - Pogo	SMM - Pogo	Analyzer: NOx	Span Value: 181
Location: Delta Junction, AK		Analyzer: CO	Span Value: 90.6
Source ID: Incinerator		Analyzer: SO2	Span Value: 91
Run Number: Run I29-1		Analyzer:	Span Value:
Date: 10/07/14		Analyzer: O2	Span Value: 21.25
Run Time: 1121-1321		Analyzer: CO2	Span Value: 20.74

Run No.	Monitor ID	Analyzer Response (ppm)	Initial Values				Final Values				Calibration Drift (%) (Pass/Fail)	
			Initial Time (military)	System Response (ppm)	Calibration Bias (%) (Pass/Fail)	Final Time (military)	System Response (ppm)	Calibration Bias (%) (Pass/Fail)				
Run 2 Zero Run 2 Span	NOx	0.1 93.9	1014 1018	0 90.5	-0.1 -1.9	Pass Pass	1328 1333	0.0 89.4	-0.1 -2.5	Pass Pass	0.0 -0.6	Pass Pass
	NOx											
Run 2 Zero Run 2 Span	CO	0.0 50.2	1014 1022	0.2 49.5	0.2 -0.8	Pass Pass	1328 1337	0.2 49.4	0.2 -0.9	Pass Pass	0.0 -0.1	Pass Pass
	CO											
Run 2 Zero Run 2 Span	SO2	0.1 49.9	1014 1022	-0.6 47.9	-0.8 -2.2	Pass Pass	1328 1337	-0.8 47.5	-1.0 -2.6	Pass Pass	-0.2 -0.4	Pass Pass
	SO2											
Run 2 Zero Run 2 Span												
Run 2 Zero Run 2 Span	O2	0.02 10.00	1022 1014	0.03 9.97	0.0 -0.1	Pass Pass	1333 1328	0.03 9.97	0.0 -0.1	Pass Pass	0.0 0.0	Pass Pass
	O2											
Run 2 Zero Run 2 Span	CO2	0.10 10.05	1022 1014	0.1 10.02	0.0 -0.1	Pass Pass	1333 1328	0.02 10.03	-0.4 -0.1	Pass Pass	-0.4 0.0	Pass Pass
	CO2											

System Cal Bias % = (System Cal Response - Analyzer Response) / CS X 100

% Allowable = 5.0

Calibration Drift = (Final System Response - Initial System Response) / CS X 100

% Allowable = 3.0

Analyzer Bias

SMM - Pogo	SMM - Pogo	Analyzer: NOx	Span Value: 181
Location: Delta Junction, AK		Analyzer: CO	Span Value: 90.6
Source ID: Incinerator		Analyzer: SO2	Span Value: 91
Run Number: Run I23-1		Analyzer:	Span Value:
Date: 10/07/14		Analyzer: O2	Span Value: 21.25
Run Time: 1426-1626		Analyzer: CO2	Span Value: 20.74

Run No.	Monitor ID	Analyzer Response (ppm)	Initial Values				Final Values				Calibration Drift (%) (Pass/Fail)	
			Initial Time (military)	System Response (ppm)	Calibration Bias (%) (Pass/Fail)	Final Time (military)	System Response (ppm)	Calibration Bias (%) (Pass/Fail)				
Run 3 Zero	NOx	0.1	1328	0	-0.1 Pass	1631	0.1	0.0 Pass	0.1	Pass	0.1	Pass
	NOx	93.9	1333	89.4	-2.5 Pass	1634	91.3	-1.4 Pass	1.0	Pass		
Run 3 Span	CO	0.0	1328	0.2	0.2 Pass	1631	0.2	0.2 Pass	0.0	Pass	0.0	Pass
	CO	50.2	1337	49.4	-0.9 Pass	1637	50.1	-0.1 Pass	0.8	Pass		
Run 3 Zero	SO2	0.1	1328	-0.8	-1.0 Pass	1631	-0.3	-0.4 Pass	0.5	Pass	0.5	Pass
	SO2	49.9	1337	47.5	-2.6 Pass	1637	48.0	-2.1 Pass	0.5	Pass		
Run 3 Zero												
Run 3 Span	O2	0.02	1333	0.03	0.0 Pass	1634	0.07	0.2 Pass	0.2	Pass	0.2	Pass
	O2	10.00	1328	9.97	-0.1 Pass	1631	9.98	-0.1 Pass	0.0	Pass		
Run 3 Zero	CO2	0.10	1333	0.02	-0.4 Pass	1634	-0.07	-0.8 Pass	-0.4	Pass	-0.4	Pass
	CO2	10.05	1328	10.03	-0.1 Pass	1631	9.88	-0.8 Pass	-0.7	Pass		

System Cal Bias % = (System Cal Response - Analyzer Response) / CS X 100

% Allowable = 5.0

Calibration Drift = (Final System Response - Initial System Response) / CS X 100

% Allowable = 3.0

Analyzer Bias

SMM - Pogo	SMM - Pogo	Analyzer: NOx	Span Value: 181
Location: Delta Junction, AK		Analyzer: CO	Span Value: 90.6
Source ID: Incinerator		Analyzer: SO2	Span Value: 91
Run Number: Run I5-2		Analyzer:	Span Value:
Date: 10/07/14		Analyzer: O2	Span Value: 21.25
Run Time: 1717-1817		Analyzer: CO2	Span Value: 20.74

Run No.	Monitor ID	Analyzer Response (ppm)	Initial Values				Final Values				Calibration Drift (%) (Pass/Fail)	
			Initial Time (military)	System Response (ppm)	Calibration Bias (%) (Pass/Fail)	Final Time (military)	System Response (ppm)	Calibration Bias (%) (Pass/Fail)				
Run 3 Zero Run 3 Span	NOx	0.1 93.9	1631 1634	0.1 91.3	0.0 -1.4	Pass Pass	1825 1829	0.1 88.8	0.0 -2.8	Pass Pass	0.0 -1.4	Pass Pass
	NOx											
Run 3 Zero Run 3 Span	CO	0.0 50.2	1631 1637	0.2 50.1	0.2 -0.1	Pass Pass	1825 1832	0.2 49.2	0.2 -1.1	Pass Pass	0.0 -1.0	Pass Pass
	CO											
Run 3 Zero Run 3 Span	SO2	0.1 49.9	1631 1637	-0.3 48	-0.4 -2.1	Pass Pass	1825 1832	-0.7 47.5	-0.9 -2.6	Pass Pass	-0.4 -0.5	Pass Pass
	SO2											
Run 3 Zero Run 3 Span												
Run 3 Zero Run 3 Span	O2	0.02 10.00	1634 1631	0.07 9.98	0.2 -0.1	Pass Pass	1829 1825	0.03 9.93	0.0 -0.3	Pass Pass	-0.2 -0.2	Pass Pass
	O2											
Run 3 Zero Run 3 Span	CO2	0.10 10.05	1634 1631	-0.07 9.88	-0.8 -0.8	Pass Pass	1829 1825	0.14 10.00	0.2 -0.2	Pass Pass	1.0 0.6	Pass Pass
	CO2											

System Cal Bias % = (System Cal Response - Analyzer Response) / CS X 100

% Allowable = 5.0

Calibration Drift = (Final System Response - Initial System Response) / CS X 100

% Allowable = 3.0

Analyzer Calibration

Client	SMM - Pogo	Cylinder #, Supplier, & Conc.	Analyzer	NOx	Model	TEI 42i
Location	Delta Junction, AK		Full Scale	181.0	Serial #	
Source ID	Incinerator		Analyzer	CO	Model	TEI 48i
Operator	J Rosburg		Full Scale	90.6	Serial #	
Date	10/08/14		Analyzer		Model	
Initial Cal Time	0743-0801		Full Scale		Serial #	
Final Cal Time	1753-1809		Analyzer	SO2	Model	AMETEK 921
			Full Scale	91.0	Serial #	
			Analyzer	O2	Model	Sevomex1440
			Full Scale	21.25	Serial #	
			Analyzer	CO2	Model	Sevomex1440
			Full Scale	20.74	Serial #	

Analyzer	Initial Analyzer Response	Cylinder Value (ppm/%)	Analyzer Response (ppm/%)	Absolute Difference (ppm/%)	Percent Difference	
					(% of span)	(Pass/Fail)
Analyzer NOx	Initial Analyzer Response	Zero	0.0	0.3	0.3	0.2 Pass
		Mid-Range	91.1	94.4	3.3	1.8 Pass
		High-Range	181.0	180.3	0.7	0.4 Pass
Analyzer Response		Zero	0.0	0.0	0.0	0.0 Pass
		Mid-Range	91.1	90.6	0.5	0.3 Pass
		High-Range	181.0	181.3	0.3	0.2 Pass
Analyzer CO	Initial Analyzer Response	Zero	0.0	0.0	0.0	0.0 Pass
		Mid-Range	50.1	50.1	0.0	0.0 Pass
		High-Range	90.6	90.5	0.1	0.1 Pass
Analyzer Response		Zero	0.0	0.2	0.2	0.2 Pass
		Mid-Range	50.1	48.4	1.7	1.9 Pass
		High-Range	90.6	90.9	0.3	0.3 Pass
Analyzer SO2	Initial Analyzer Response	Zero	0.0	1.1	1.1	1.2 Pass
		Mid-Range	49.3	49.8	0.5	0.5 Pass
		High-Range	91.0	91.6	0.6	0.7 Pass
Analyzer Response		Zero	0.0	0.0	0.0	0.0 Pass
		Mid-Range	49.3	50.2	0.9	1.0 Pass
		High-Range	91.0	92.8	1.8	2.0 Pass
Analyzer Predicted	Initial Analyzer Response	Zero				
		Mid-Range				
		Mid-Range				
		High-Range				
Analyzer Response	Predicted	Zero				
		Mid-Range				
		Mid-Range				
		High-Range				
Analyzer O2	Initial Analyzer Response	Zero	0.00	0.07	0.1	0.3 Pass
		Mid-Range	9.98	9.93	0.1	0.2 Pass
		High-Range	21.25	21.05	0.2	0.9 Pass
Analyzer Response		Zero	0.00	0.05	0.1	0.2 Pass
		Mid-Range	9.98	9.90	0.1	0.4 Pass
		High-Range	21.25	20.91	0.3	1.6 Pass
Analyzer CO2	Initial Analyzer Response	Zero	0.00	0.10	0.1	0.5 Pass
		Mid-Range	9.85	9.98	0.1	0.6 Pass
		High-Range	20.74	20.79	0.1	0.2 Pass
Analyzer Response		Zero	0.00	-0.10	0.1	0.5 Pass
		Mid-Range	9.85	9.65	0.2	1.0 Pass
		High-Range	20.74	20.42	0.3	1.5 Pass

Cal Error % =abs(CEM-Cylinder) / CS X 100

Allowable Calibration Error % = 2.0 for all analyzers except THC which is 5.0

Analyzer Bias

Client:	SMM - Pogo	Analyzer:	NOx	Span Value:	181
Location:	Delta Junction, AK	Analyzer:	CO	Span Value:	90.6
Source ID:	Incinerator	Analyzer:	SO2	Span Value:	91
Run Number:	Run I29-2	Analyzer:		Span Value:	
Date:	10/08/14	Analyzer:	O2	Span Value:	21.25
Run Time:	0814-1014	Analyzer:	CO2	Span Value:	20.74

Run No.	Monitor ID	Analyzer Response (ppm)	Initial Values			Final Values			Calibration Drift (%) (Pass/Fail)	
			Initial Time (military)	System Response (ppm)	Calibration Bias (%) (Pass/Fail)	Final Time (military)	System Response (ppm)	Calibration Bias (%) (Pass/Fail)		
Run 1 Zero	NOx	0.3 94.4	803	0.1	-0.1 -0.8	Pass	1021	0.1	-0.1 -1.6	Pass
			806	93.0		Pass	1024	91.5		Pass
Run 1 Span	CO	0.0 50.1	803	0.3	0.3 -0.1	Pass	1021	0.2	0.2 -2.2	Pass
			809	50.0		Pass	1031	48.1		Pass
Run 1 Zero	SO2	1.1 49.8	803	0.8	-0.3 -1.2	Pass	1021	-0.1	-1.3 -0.9	Pass
			809	48.7		Pass	1031	49.0		Pass
Run 1 Zero										
Run 1 Span	O2	0.07 9.93	806	0.07	0.0 -0.1	Pass	1024	0.07	0.0 -0.2	Pass
			803	9.90		Pass	1021	9.88		Pass
Run 1 Zero	CO2	0.10 9.98	806	0.12	0.1 -1.2	Pass	1024	0.03	-0.3 -0.6	Pass
			803	9.73		Pass	1021	9.86		Pass

System Cal Bias % = (System Cal Response - Analyzer Response) / CS X 100

% Allowable = 5.0

Calibration Drift = (Final System Response - Initial System Response) / CS X 100

% Allowable = 3.0

Analyzer Bias

Client:	SMM - Pogo	Analyzer:	NOx	Span Value:	181
Location:	Delta Junction, AK	Analyzer:	CO	Span Value:	90.6
Source ID:	Incinerator	Analyzer:	SO2	Span Value:	91
Run Number:	Run I23-2	Analyzer:		Span Value:	
Date:	10/08/14	Analyzer:	O2	Span Value:	21.25
Run Time:	1110-1310	Analyzer:	CO2	Span Value:	20.74

Run No.	Monitor ID	Analyzer Response (ppm)	Initial Values				Final Values				Calibration Drift (%) (Pass/Fail)	
			Initial Time (military)	System Response (ppm)	Calibration Bias (%) (Pass/Fail)	Final Time (military)	System Response (ppm)	Calibration Bias (%) (Pass/Fail)				
Run 2 Zero Run 2 Span	NOx NOx	0.3 94.4	1021 1024	0.1 91.5	-0.1 -1.6	Pass Pass	1324	0.4	0.1	Pass	0.2	Pass
							1328	90.7	-2.0	Pass	-0.4	Pass
Run 2 Zero Run 2 Span	CO CO	0.0 50.1	1021 1031	0.2 48.1	0.2 -2.2	Pass Pass	1324	0.2	0.2	Pass	0.0	Pass
							1331	48.2	-2.1	Pass	0.1	Pass
Run 2 Zero Run 2 Span	SO2 SO2	1.1 49.8	1021 1031	-0.1 49	-1.3 -0.9	Pass Pass	1324	0.2	-1.0	Pass	0.3	Pass
							1331	49.2	-0.7	Pass	0.2	Pass
Run 2 Zero Run 2 Span												
Run 2 Zero Run 2 Span	O2 O2	0.07 9.93	1024 1021	0.07 9.88	0.0 -0.2	Pass Pass	1328	0.07	0.0	Pass	0.0	Pass
							1324	9.90	-0.1	Pass	0.1	Pass
Run 2 Zero Run 2 Span	CO2 CO2	0.10 9.98	1024 1021	0.03 9.86	-0.3 -0.6	Pass Pass	1328	0.14	0.2	Pass	0.5	Pass
							1324	9.93	-0.2	Pass	0.3	Pass

System Cal Bias % = (System Cal Response - Analyzer Response) / CS X 100

% Allowable = 5.0

Calibration Drift = (Final System Response - Initial System Response) / CS X 100

% Allowable = 3.0

Analyzer Bias

Client:	SMM - Pogo	Analyzer:	NOx	Span Value:	181
Location:	Delta Junction, AK	Analyzer:	CO	Span Value:	90.6
Source ID:	Incinerator	Analyzer:	SO2	Span Value:	91
Run Number:	Run I29-3	Analyzer:		Span Value:	
Date:	10/08/14	Analyzer:	O2	Span Value:	21.25
Run Time:	1404-1604	Analyzer:	CO2	Span Value:	20.74

Run No.	Monitor ID	Analyzer Response (ppm)	Initial Values				Final Values				Calibration Drift (%) (Pass/Fail)	
			Initial Time (military)	System Response (ppm)	Calibration Bias (%) (Pass/Fail)	Final Time (military)	System Response (ppm)	Calibration Bias (%) (Pass/Fail)				
Run 3 Zero Run 3 Span	NOx NOx	0.3 94.4	1324	0.4 90.7	0.1 -2.0	Pass Pass	1613 1617	0.3 90.8	0.0 -2.0	Pass Pass	-0.1 0.1	Pass Pass
			1328	90.7								
Run 3 Zero Run 3 Span	CO CO	0.0 50.1	1324	0.2 48.2	0.2 -2.1	Pass Pass	1613 1619	0.2 48.3	0.2 -2.0	Pass Pass	0.0 0.1	Pass Pass
			1331	48.2								
Run 3 Zero Run 3 Span	SO2 SO2	1.1 49.8	1324	0.2 49.2	-1.0 -0.7	Pass Pass	1613 1619	0.4 49.5	-0.8 -0.3	Pass Pass	0.2 0.3	Pass Pass
			1331	49.2								
Run 3 Zero Run 3 Span	O2 O2	0.07 9.93	1328	0.07 9.9	0.0 -0.1	Pass Pass	1617 1613	0.07 9.90	0.0 -0.1	Pass Pass	0.0 0.0	Pass Pass
			1324	9.9								
Run 3 Zero Run 3 Span	CO2 CO2	0.10 9.98	1328	0.14 9.93	0.2 -0.2	Pass Pass	1617 1613	0.03 9.80	-0.3 -0.9	Pass Pass	-0.5 -0.6	Pass Pass
			1324	9.93								

System Cal Bias % = (System Cal Response - Analyzer Response) / CS X 100

% Allowable = 5.0

Calibration Drift = (Final System Response - Initial System Response) / CS X 100

% Allowable = 3.0

Analyzer Bias

Client:	SMM - Pogo	Analyzer:	NOx	Span Value:	181
Location:	Delta Junction, AK	Analyzer:	CO	Span Value:	90.6
Source ID:	Incinerator	Analyzer:	SO2	Span Value:	91
Run Number:	I5-3	Analyzer:		Span Value:	
Date:	10/08/14	Analyzer:	O2	Span Value:	21.25
Run Time:	1636-1736	Analyzer:	CO2	Span Value:	20.74

Run No.	Monitor ID	Analyzer Response (ppm)	Initial Values				Final Values				Calibration Drift (%) (Pass/Fail)	
			Initial Time (military)	System Response (ppm)	Calibration Bias (%) (Pass/Fail)	Final Time (military)	System Response (ppm)	Calibration Bias (%) (Pass/Fail)				
Run 3 Zero Run 3 Span	NOx NOx	0.3 94.4	1613 1617	0.3 90.8	0.0 -2.0	Pass Pass	1739 1742	0.2 90.0	-0.1 -2.4	Pass Pass	-0.1 -0.4	Pass Pass
Run 3 Zero Run 3 Span	CO CO	0.0 50.1	1613 1619	0.2 48.3	0.2 -2.0	Pass Pass	1739 1745	0.2 48.1	0.2 -2.2	Pass Pass	0.0 -0.2	Pass Pass
Run 3 Zero Run 3 Span	SO2 SO2	1.1 49.8	1613 1619	0.4 49.5	-0.8 -0.3	Pass Pass	1739 1745	-0.1 48.8	-1.3 -1.1	Pass Pass	-0.5 -0.8	Pass Pass
Run 3 Zero Run 3 Span	O2 O2	0.07 9.93	1617 1613	0.07 9.9	0.0 -0.1	Pass Pass	1742 1739	0.07 9.90	0.0 -0.1	Pass Pass	0.0 0.0	Pass Pass
Run 3 Zero Run 3 Span	CO2 CO2	0.10 9.98	1617 1613	0.03 9.8	-0.3 -0.9	Pass Pass	1742 1739	-0.07 9.81	-0.8 -0.8	Pass Pass	-0.5 0.0	Pass Pass

System Cal Bias % = (System Cal Response - Analyzer Response) / CS X 100

% Allowable = 5.0

Calibration Drift = (Final System Response - Initial System Response) / CS X 100

% Allowable = 3.0

Analyzer Calibration

Client	SMM - Pogo	Cylinder #, Supplier, & Conc.	Analyzer	NOx	Model	TEI 42i
Location	Delta Junction, AK		Full Scale	181.0	Serial #	
Source ID	Incinerator		Analyzer	CO	Model	TEI 48i
Operator	J Rosburg		Full Scale	90.6	Serial #	
Date	10/09/14		Analyzer		Model	
Initial Cal Time	0800-0816		Full Scale		Serial #	
Final Cal Time	1233-1250		Analyzer	SO2	Model	AMETEK 921
			Full Scale	91.0	Serial #	
			Analyzer	O2	Model	Sevomex1440
			Full Scale	21.25	Serial #	
			Analyzer	CO2	Model	Sevomex1440
			Full Scale	20.74	Serial #	

Analyzer	Value	Cylinder Value (ppm/%)	Analyzer Response (ppm/%)	Absolute Difference (ppm/%)	Percent Difference	
					(% of span)	(Pass/Fail)
Analyzer NOx Initial Analyzer Response	Zero	0.0	0.1	0.1	0.1	Pass
	Mid-Range	91.1	93.2	2.1	1.2	Pass
	High-Range	181.0	179.5	1.5	0.8	Pass
Analyzer Response	Zero	0.0	0.1	0.1	0.1	Pass
	Mid-Range	91.1	90.3	0.8	0.4	Pass
	High-Range	181.0	179.0	2.0	1.1	Pass
Analyzer CO Initial Analyzer Response	Zero	0.0	0.1	0.1	0.1	Pass
	Mid-Range	50.1	50.4	0.3	0.3	Pass
	High-Range	90.6	90.2	0.4	0.4	Pass
Analyzer Response	Zero	0.0	0.2	0.2	0.2	Pass
	Mid-Range	50.1	48.7	1.4	1.5	Pass
	High-Range	90.6	90.0	0.6	0.7	Pass
Analyzer SO2 Initial Analyzer Response	Zero	0.0	-0.2	0.2	0.2	Pass
	Mid-Range	49.3	49.1	0.2	0.2	Pass
	High-Range	91.0	91.4	0.4	0.4	Pass
Analyzer Response	Zero	0.0	2.3	2.3	2.5	Fail
	Mid-Range	49.3	48.2	1.1	1.2	Pass
	High-Range	91.0	89.7	1.3	1.4	Pass
Analyzer Predicted Initial Analyzer Response * Cal. through CEM system	Zero					
	Mid-Range					
	Mid-Range					
	High-Range					
Analyzer Response Predicted * Cal. through CEM system	Zero					
	Mid-Range					
	Mid-Range					
	High-Range					
Analyzer O2 Initial Analyzer Response	Zero	0.00	0.10	0.1	0.5	Pass
	Mid-Range	9.98	9.97	0.0	0.0	Pass
	High-Range	21.25	21.09	0.2	0.8	Pass
Analyzer Response	Zero	0.00	0.03	0.0	0.1	Pass
	Mid-Range	9.98	9.88	0.1	0.5	Pass
	High-Range	21.25	20.90	0.4	1.6	Pass
Analyzer CO2 Initial Analyzer Response	Zero	0.00	0.15	0.2	0.7	Pass
	Mid-Range	9.85	9.94	0.1	0.4	Pass
	High-Range	20.74	20.81	0.1	0.3	Pass
Analyzer Response	Zero	0.00	-0.02	0.0	0.1	Pass
	Mid-Range	9.85	9.85	0.0	0.0	Pass
	High-Range	20.74	20.71	0.0	0.1	Pass

Cal Error % =abs(CEM-Cylinder) / CS X 100

Allowable Calibration Error % = 2.0 for all analyzers except THC which is 5.0

Analyzer Bias

Client:	SMM - Pogo	Analyzer:	NOx	Span Value:	181
Location:	Delta Junction, AK	Analyzer:	CO	Span Value:	90.6
Source ID:	Incinerator	Analyzer:	SO2	Span Value:	91
Run Number:	Run I23-3	Analyzer:		Span Value:	
Date:	10/09/14	Analyzer:	O2	Span Value:	21.25
Run Time:	0829-1029	Analyzer:	CO2	Span Value:	20.74

Run No.	Monitor ID	Analyzer Response (ppm)	Initial Values			Final Values			Calibration Drift (%) (Pass/Fail)	
			Initial Time (military)	System Response (ppm)	Calibration Bias (%) (Pass/Fail)	Final Time (military)	System Response (ppm)	Calibration Bias (%) (Pass/Fail)		
Run 1 Zero	NOx	0.1 93.2	818	0.0	-0.1 -0.6	Pass	1043	0.1	0.0 -1.6	Pass
			826	92.2		Pass	1051	90.3		-1.0 Pass
Run 1 Span	CO	0.1 50.4	818	0.4	0.3 -0.2	Pass	1043	0.2	0.1 -1.1	Pass
			823	50.2		Pass	1048	49.4		-0.2 Pass
Run 1 Zero	SO2	-0.2 49.1	818	-0.9	-0.8 -1.8	Pass	1043	-2.0	-2.0 -0.8	Pass
			823	47.5		Pass	1048	48.4		-1.2 Pass
Run 1 Zero										
Run 1 Span	O2	0.10 9.97	823	0.08	-0.1 -0.2	Pass	1048	0.07	-0.1 -0.3	Pass
			818	9.93		Pass	1043	9.90		-0.1 Pass
Run 1 Zero	CO2	0.15 9.94	823	0.08	-0.3 -0.1	Pass	1048	0.20	0.2 -0.7	Pass
			818	9.92		Pass	1043	9.80		0.6 Pass

System Cal Bias % = (System Cal Response - Analyzer Response) / CS X 100

% Allowable = 5.0

Calibration Drift = (Final System Response - Initial System Response) / CS X 100

% Allowable = 3.0

Analyzer Bias

Client:	SMM - Pogo	Analyzer:	NOx	Span Value:	181
Location:	Delta Junction, AK	Analyzer:	CO	Span Value:	90.6
Source ID:	Incinerator	Analyzer:	SO2	Span Value:	91
Run Number:	Run I5-4	Analyzer:		Span Value:	
Date:	10/09/14	Analyzer:	O2	Span Value:	21.25
Run Time:	1116-1216	Analyzer:	CO2	Span Value:	20.74

Run No.	Monitor ID	Analyzer Response (ppm)	Initial Values				Final Values				Calibration Drift (%) (Pass/Fail)	
			Initial Time (military)	System Response (ppm)	Calibration Bias (%) (Pass/Fail)	Final Time (military)	System Response (ppm)	Calibration Bias (%) (Pass/Fail)				
Run 2 Zero Run 2 Span	NOx NOx	0.1 93.2	1043 1051	0.1 90.3	0.0 -1.6	Pass Pass	1223	0.1	0.0	Pass	0.0	Pass
							1231	89.6	-2.0	Pass	-0.4	Pass
Run 2 Zero Run 2 Span	CO CO	0.1 50.4	1043 1048	0.2 49.4	0.1 -1.1	Pass Pass	1223	0.2	0.1	Pass	0.0	Pass
							1227	47.7	-3.0	Pass	-1.9	Pass
Run 2 Zero Run 2 Span	SO2 SO2	-0.2 49.1	1043 1048	-2 48.4	-2.0 -0.8	Pass Pass	1223	-2.3	-2.3	Pass	-0.3	Pass
							1227	49.3	0.2	Pass	1.0	Pass
Run 2 Zero Run 2 Span												
Run 2 Zero Run 2 Span	O2 O2	0.10 9.97	1048 1043	0.07 9.9	-0.1 -0.3	Pass Pass	1227	0.07	-0.1	Pass	0.0	Pass
							1223	9.86	-0.5	Pass	-0.2	Pass
Run 2 Zero Run 2 Span	CO2 CO2	0.15 9.94	1048 1043	0.2 9.8	0.2 -0.7	Pass Pass	1227	0.20	0.2	Pass	0.0	Pass
							1223	10.07	0.6	Pass	1.3	Pass

System Cal Bias % = (System Cal Response - Analyzer Response) / CS X 100

% Allowable = 5.0

Calibration Drift = (Final System Response - Initial System Response) / CS X 100

% Allowable = 3.0

CERTIFICATE OF ANALYSIS
Grade of Product: EPA Protocol

Part Number: E03NI80E15A0138 Reference Number: 54-124429617-1
Cylinder Number: CC443767 Cylinder Volume: 150.9 CF
Laboratory: ASG - Chicago - IL Cylinder Pressure: 2015 PSIG
PGVP Number: B12014 Valve Outlet: 590
Gas Code: CO2,O2,BALN Certification Date: Apr 17, 2014

Expiration Date: Apr 17, 2022

Certification performed in accordance with "EPA Traceability Protocol for Assay and Certification of Gaseous Calibration Standards (May 2012)" document EPA 600/R-12/531, using the assay procedures listed. Analytical Methodology does not require correction for analytical interference. This cylinder has a total analytical uncertainty as stated below with a confidence level of 95%. There are no significant impurities which affect the use of this calibration mixture. All concentrations are on a volume/volume basis unless otherwise noted.

Do Not Use This Cylinder below 100 psig, i.e. 0.7 megapascals.

ANALYTICAL RESULTS					
Component	Requested Concentration	Actual Concentration	Protocol Method	Total Relative Uncertainty	Assay Dates
CARBON DIOXIDE	10.00 %	9.847 %	G1	+/- 0.8% NIST Traceable	04/17/2014
OXYGEN	10.00 %	9.983 %	G1	+/- 0.9% NIST Traceable	04/17/2014
NITROGEN	Balance				

CALIBRATION STANDARDS					
Type	Lot ID	Cylinder No	Concentration	Uncertainty	Expiration Date
NTRM	97050816	SG9167530BAL	7.029 % CARBON DIOXIDE/NITROGEN	+/- 0.5%	May 01, 2016
NTRM	06120110	CC195933	9.898 % OXYGEN/NITROGEN	+/- 0.7%	Jun 26, 2018

ANALYTICAL EQUIPMENT					
Instrument/Make/Model	Analytical Principle	Last Multipoint Calibration			
CO2-1 HORIBA VIA-510 V1E3H7P5	NDIR	Mar 19, 2014			
O2-1 HORIBA MPA-510 3VUYL9NR	Paramagnetic	Apr 15, 2014			

Triad Data Available Upon
Request

Notes:

Approved for Release

CERTIFICATE OF ANALYSIS Grade of Product: EPA Protocol

Part Number: E03NI58E15A02X7 Reference Number: 54-124358799-1
Cylinder Number: XC016346B Cylinder Volume: 160.6 CF
Laboratory: ASG - Chicago - IL Cylinder Pressure: 2014 PSIG
PGVP Number: B12013 Valve Outlet: 590
Gas Code: CO2,O2 Analysis Date: Feb 12, 2013

Expiration Date: Feb 12, 2021

Certification performed in accordance with "EPA Traceability Protocol for Assay and Certification of Gaseous Calibration Standards (May 2012)" document EPA 600/R-12/531, using the assay procedures listed. Analytical Methodology does not require correction for analytical interference. This cylinder has a total analytical uncertainty as stated below with a confidence level of 95%. There are no significant impurities which affect the use of this calibration mixture. All concentrations are on a volume/volume basis unless otherwise noted.

Do Not Use This Cylinder below 100 psig, i.e. 0.7 megapascals.

ANALYTICAL RESULTS				
Component	Requested Concentration	Actual Concentration	Protocol Method	Total Relative Uncertainty
CARBON DIOXIDE	21.00 %	20.74 %	G1	+/- 1% NIST Traceable
OXYGEN	21.00 %	21.25 %	G1	+/- 1% NIST Traceable
NITROGEN	Balance			

CALIBRATION STANDARDS				
Type	Lot ID	Cylinder No	Concentration	Expiration Date
NTRM/CO2	06120405	CC184974	19.66 % CARBON DIOXIDE/NITROGEN	May 01, 2016
NTRM/O2	06120202	CC195927	20.9 % OXYGEN/NITROGEN	Dec 01, 2015

ANALYTICAL EQUIPMENT		
Instrument/Make/Model	Analytical Principle	Last Multipoint Calibration
CO2-1 HORIBA VIA-510 V1E3H7P5	NDIR	Jan 28, 2013
O2-1 HORIBA MPA-510 3VUYL9NR	Paramagnetic	Jan 19, 2013

Triad Data Available Upon Request

Notes:

Approved for Release



Air Liquide America
Specialty Gases LLC



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500 WEAVER PARK RD, LONGMONT, CO 80501

Phone: 888-253-1635

Fax: 303-772-7673

CERTIFICATE OF ACCURACY: EPA Protocol Gas

Assay Laboratory - PGVP Vendor ID: A42014
AIR LIQUIDE AMERICA SPECIALTY GASES LLC
500 WEAVER PARK RD
LONGMONT, CO 80501

P.O. No.: 1046
Document # : 56730132-003

Customer
SLR INTERNATIONAL CORPORATION
1612 SPECHT POINT ROAD
SUITE 119
FORT COLLINS CO 80525
US

ANALYTICAL INFORMATION

Gas Type : CO,NO,SO₂,BALN

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards; Procedure G-1. EPA/600/R-12/531; May 2012. Do not use this standard if pressure is less than 100 psig.

Cylinder Number:	ALM005439	Certification Date:	23Sep2014	Exp. Date:	24Sep2017
Cylinder Pressure:	1900 PSIG			Batch No:	LGM0130304

COMPONENT	CERTIFIED CONCENTRATION (Moles)		ACCURACY (ABSOLUTE / RELATIVE)		
CARBON MONOXIDE	50.1	PPM	0.4	PPM	/ 0.8 %
NITRIC OXIDE	48.6	PPM	0.4	PPM	/ 0.8 %
SULFUR DIOXIDE	49.3	PPM	0.6	PPM	/ 1.2 %
NITROGEN - OXYGEN FREE		BALANCE			
TOTAL OXIDES OF NITROGEN	48.7	PPM		Reference Value Only	

TRACEABILITY

REFERENCE STANDARD

COMPONENT	CONCENTRATION	UNCERTAINTY	CYLINDER	TYPE/SRM SAMPLE	EXP. DATE
CARBON MONOXIDE	48.6000 PPM	0.2400 PPM	KAL004197	NTRM 1678	14Nov2017
NITRIC OXIDE	97.6000 PPM	0.8000 PPM	KAL003794	NTRM 1684/092810	22Jul2017
SULFUR DIOXIDE	49.6700 PPM	0.5000 PPM	KAL003211	NTRM 1693/041709	20Aug2016

ANALYTICAL METHOD

1st Analysis: 16Sep2014

COMPONENT	INSTRUMENT	ANALYTICAL/PRINCIPLE	CALIBRATED	CONCENTRATION
CARBON MONOXIDE	MKS ONLINE/2030/0929062	FTIR	04Sep2014	50.08 PPM
NITRIC OXIDE	MKS ONLINE/2030/0929062	FTIR	11Sep2014	48.82 PPM
SULFUR DIOXIDE	MKS ONLINE/2030/0929062	FTIR	18Sep2014	49.29 PPM

2nd Analysis: 23Sep2014

COMPONENT	INSTRUMENT	ANALYTICAL/PRINCIPLE	CALIBRATED	CONCENTRATION
NITRIC OXIDE	MKS ONLINE/2030/0929062	FTIR	11Sep2014	48.71 PPM
SULFUR DIOXIDE	MKS ONLINE/2030/0929062	FTIR	18Sep2014	49.24 PPM

APPROVED BY:

JON WITZAK



Air Liquide America
Specialty Gases LLC



RATA CLASS

Guaranteed +/- 1% Accuracy

500 WEAVER PARK RD, LONGMONT, CO 80501

Phone: 888-253-1635

Fax: 303-772-7673

CERTIFICATE OF ACCURACY: EPA Protocol Gas

Assay Laboratory - PGVP Vendor ID: A42014
 AIR LIQUIDE AMERICA SPECIALTY GASES LLC
 500 WEAVER PARK RD
 LONGMONT, CO 80501

P.O. No.: 1046
 Document #: 56730132-002

Customer
 SLR INTERNATIONAL CORPORATION
 1612 SPECHT POINT ROAD
 SUITE 119
 FORT COLLINS CO 80525
 US

ANALYTICAL INFORMATION

Gas Type : CO,NO,SO₂,BALN

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards; Procedure G-1. EPA/600/R-12/531; May 2012. Do not use this standard if pressure is less than 100 psig.

Cylinder Number: ALM008985
Cylinder Pressure: 1900 PSIG

Certification Date: 23Sep2014

Exp. Date: 24Sep2022

Batch No: LGM0130305

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ACCURACY (ABSOLUTE / RELATIVE)
CARBON MONOXIDE	90.6 PPM	0.6 PPM / 0.7 %
NITRIC OXIDE	91.1 PPM	0.8 PPM / 0.9 %
SULFUR DIOXIDE	91 PPM	1.0 PPM / 1.1 %
NITROGEN - OXYGEN FREE	BALANCE	
TOTAL OXIDES OF NITROGEN	91.1 PPM	Reference Value Only

TRACEABILITY

REFERENCE STANDARD

COMPONENT	CONCENTRATION	UNCERTAINTY	CYLINDER	TYPE/SRM SAMPLE	EXP. DATE
CARBON MONOXIDE	48.6000 PPM	0.2400 PPM	KAL004197	NTRM 1678	14Nov2017
NITRIC OXIDE	97.6000 PPM	0.8000 PPM	KAL003794	NTRM 1684/092810	22Jul2017
SULFUR DIOXIDE	49.6700 PPM	0.5000 PPM	KAL003211	NTRM 1693/041709	20Aug2016

ANALYTICAL METHOD

1st Analysis: 16Sep2014

COMPONENT	INSTRUMENT	ANALYTICAL/PRINCIPLE	CALIBRATED	CONCENTRATION
CARBON MONOXIDE	MKS ONLINE/2030/0929062	FTIR	04Sep2014	90.62 PPM
NITRIC OXIDE	MKS ONLINE/2030/0929062	FTIR	11Sep2014	91.20 PPM
SULFUR DIOXIDE	MKS ONLINE/2030/0929062	FTIR	18Sep2014	91.04 PPM

2nd Analysis: 23Sep2014

COMPONENT	INSTRUMENT	ANALYTICAL/PRINCIPLE	CALIBRATED	CONCENTRATION
NITRIC OXIDE	MKS ONLINE/2030/0929062	FTIR	11Sep2014	91.02 PPM
SULFUR DIOXIDE	MKS ONLINE/2030/0929062	FTIR	18Sep2014	90.81 PPM

APPROVED BY: JW

JON WITZAK



Air Liquide America
Specialty Gases LLC



RATA CLASS

Guaranteed +/- 1% Accuracy

500 WEAVER PARK RD, LONGMONT, CO 80501

Phone: 888-253-1635

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CERTIFICATE OF ACCURACY: EPA Protocol Gas

Assay Laboratory - PGVP Vendor ID: A42014

AIR LIQUIDE AMERICA SPECIALTY GASES LLC
500 WEAVER PARK RD
LONGMONT, CO 80501

P.O. No.: 1046
Document #: 56730132-001

Customer

SLR INTERNATIONAL CORPORATION
1612 SPECHT POINT ROAD
SUITE 119
FORT COLLINS CO 80525
US

ANALYTICAL INFORMATION

Gas Type : CO,NO,SO₂,BALN

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards; Procedure G-1. EPA/600/R-12/531; May 2012. Do not use this standard if pressure is less than 100 psig.

Cylinder Number:	ALM009473	Certification Date:	23Sep2014	Exp. Date:	24Sep2022
Cylinder Pressure:	1900 PSIG			Batch No:	LGM0130306

COMPONENT	CERTIFIED CONCENTRATION (Moles)		ACCURACY (ABSOLUTE / RELATIVE)		
CARBON MONOXIDE	177	PPM	0.8	PPM /	0.5 %
NITRIC OXIDE	180	PPM	1.1	PPM /	0.6 %
SULFUR DIOXIDE	175	PPM	1.4	PPM /	0.8 %
NITROGEN - OXYGEN FREE		BALANCE			
TOTAL OXIDES OF NITROGEN	181.	PPM		Reference Value Only	

TRACEABILITY

REFERENCE STANDARD

COMPONENT	CONCENTRATION	UNCERTAINTY	CYLINDER	TYPE/SRM SAMPLE	EXP. DATE
CARBON MONOXIDE	249.1000 PPM	1.0000 PPM	AAL073140	NTRM 2636/080610	18Feb2017
NITRIC OXIDE	242.0000 PPM	1.0000 PPM	KAL004341	NTRM 1685/111307	04Jan2018
SULFUR DIOXIDE	255.5000 PPM	2.0000 PPM	KAL003932	NTRM 0260/031407	05Jan2018

ANALYTICAL METHOD

1st Analysis: 16Sep2014

COMPONENT	INSTRUMENT	ANALYTICAL/PRINCIPLE	CALIBRATED	CONCENTRATION
CARBON MONOXIDE	MKS ONLINE/2030/0929062	FTIR	04Sep2014	177.2 PPM
NITRIC OXIDE	MKS ONLINE/2030/0929062	FTIR	11Sep2014	179.7 PPM
SULFUR DIOXIDE	MKS ONLINE/2030/0929062	FTIR	18Sep2014	175.8 PPM

2nd Analysis: 23Sep2014

COMPONENT	INSTRUMENT	ANALYTICAL/PRINCIPLE	CALIBRATED	CONCENTRATION
NITRIC OXIDE	MKS ONLINE/2030/0929062	FTIR	11Sep2014	179.4 PPM
SULFUR DIOXIDE	MKS ONLINE/2030/0929062	FTIR	18Sep2014	175.0 PPM

APPROVED BY:

JON WITZAK

APPENDIX D

PROCESS INFORMATION

Unit 412 CISWI Test Report

Sumitomo Metal Mining Pogo LLC
3204 International Street
Fairbanks, Alaska 99701

December 2014

Date	Run #	Run Time Start / End	Start Time Charge	Primary Temp °F Initial	Secondary Temp °F plus 5 Min	Primary Temp °F plus 10 Min	Secondary Temp °F plus 15 Min	Primary Temp °F Plus 10 Min	Secondary Temp °F Plus 15 Min	Primary Temp °F Plus 10 Min	Secondary Temp °F Plus 15 Min	End Charge (Time)	End Primary °F	End Secondary °F	End Type II Waste Dry lbs	Type III Waste Wet lbs	Oily Rags lbs	
10/6/2014 No Testing due to Scrubber maintenance																		
10/7/201	15-1	9:06	9:06	1286	1857	1176	1298	1840	1391	1820	0:00	1366	1840	42				
10/7/201		9:22	1279	1851	1259	1314	1855	1465	1845	9:38	1484	1851		29	29			
10/7/201		9:39	1430	1822	1330	1443	1831	1455	1852	9:55	1410	1850	26	23				
10/7/201		9:56	10:12	1830	1328	1827	1321	1846	1326	1825	10:12	1330	1850	23	38			
10/7/201	129-1	11:21	11:21	1336	1820	1349	1832	1460	1869	1480	1826	11:36	1456	1860	19	32		
10/7/201		11:37	1450	1837	1393	1439	1849	1479	1863	11:52	1471	1829		27	21			
10/7/201		11:52	1462	1811	1447	1861	1478	1846	1473	1831	12:10	1466	1857	22	43			
10/7/201		12:11	1452	1821	1460	1825	1472	1828	1492	1836	12:26	1493	1830		30	25		
10/7/201		12:27	1479	1822	1385	1864	1405	1856	1478	1834	12:42	1481	1845	24	28			
10/7/201		12:42	1474	1840	1468	1819	1513	1821	1328	1829	12:59	1349	1844		31	32		
10/7/201		13:00	1363	1825	1378	1856	1319	1852	1461	1828	13:16	1463	1832	35	24			
10/7/201		13:17	1480	1844	1405	1846	1471	1838	1445	1854	13:34	1440	1843		30	31		
10/7/201	123-1	14:26	14:26	1396	1851	1477	1840	1533	1862	1482	1832	14:42	1472	1876		28	27	
10/7/201		14:43	1470	1831	1519	1853	1509	1825	1470	1849	15:00	1434	1852	34	30			
10/7/201		15:01	1411	1853	1476	1914	1408	1854	1469	1822	15:17	1475	1844		29	29		
10/7/201		15:18	1479	1855	1369	1830	1431	1842	1451	1861	15:33	1450	1835	16	38			
10/7/201		15:34	1465	1859	1490	1852	1436	1854	1449	1834	15:52	1449	1826		30	37		
10/7/201		15:53	1447	1828	1464	1828	1432	1843	1478	1822	16:11	1463	1824	24	37			
10/7/201		16:29	16:13	1452	1833	1495	1840	1390	1829	1395	1840	16:29	1399	1861		27	29	
10/7/201	15-2	17:17	1484	1859	1467	1876	1451	1823	1524	1857	17:36	1568	0:00	35	35			
10/7/201		17:37	1564	1835	1537	1831	1578	1856	1527	1839	17:54	1834	1538		38	34		
10/7/201		18:17	1538	1840	1376	1839	1366	1850	1389	1861	18:17	1446	1851	26	53			
10/7/201													Total lbs trash burned for run	61	88	38	34	

Date	Run #	Run Time Start / End	Start Time Charge	Primary Temp °F Initial	Secondary Temp °F Initial	Primary Temp °F Plus 5 Min	Secondary Temp °F Plus 5 Min	Primary Temp °F Plus 10 Min	Secondary Temp °F Plus 10 Min	Primary Temp °F Plus 15 Min	Secondary Temp °F Plus 15 Min	End Primary °F	End Secondary °F	Type II Waster Dry lbs	Type III Waste Wet lbs	Oily Rags lbs	
10/9/2014	123-3	8:29	8:30	1035	1818	1098	1822	1124	1826	1085	1816	8:48	1097	1835	22	47	
10/9/2014		8:49	1095	1839	1280	1872	1427	1841	1394	1826	9:10	1399	1829		31	45	
10/9/2014		9:12	1372	1846	1313	1810	1396	1833	1461	1840	9:28	1459	1821	24	36		
10/9/2014		9:29	1452	1849	1387	1819	1329	1878	1384	1854	9:48	1483	1853		31	38	
10/9/2014		9:49	1485	1842	1253	1828	1301	1827	1357	1858	10:06	1387	1854	31	32		
10/9/2014		10:07	1390	1847	1286	1836	1336	1857	1408	1821	10:22	1410	1852		30	23	
10/9/2014		10:23	1420	1827	1234	1835	1326	1861	1354	1844	10:44	1396	1866	21	54		
													Total lbs trash burned for run	98	169	92	106
10/9/2014	15-4	11:16	1402	1854	1390	1855	1420	1838	1430	1860	11:34	1459	1834	22	42		
10/9/2014		11:35	1471	1868	1376	1829	1394	1829	1438	1861	11:56	1483	1844	34	42		
10/9/2014		11:57	1489	1857	1404	1825	1446	1864	1468	1864	12:12	1476	1840	19	36		
10/9/2014		12:27	12:13	1477	1848	1474	1852	1475	1836	1455	1822	12:27	1453	1846	16	19	
10/9/2014													Total lbs trash burned for run	91	139	0	0